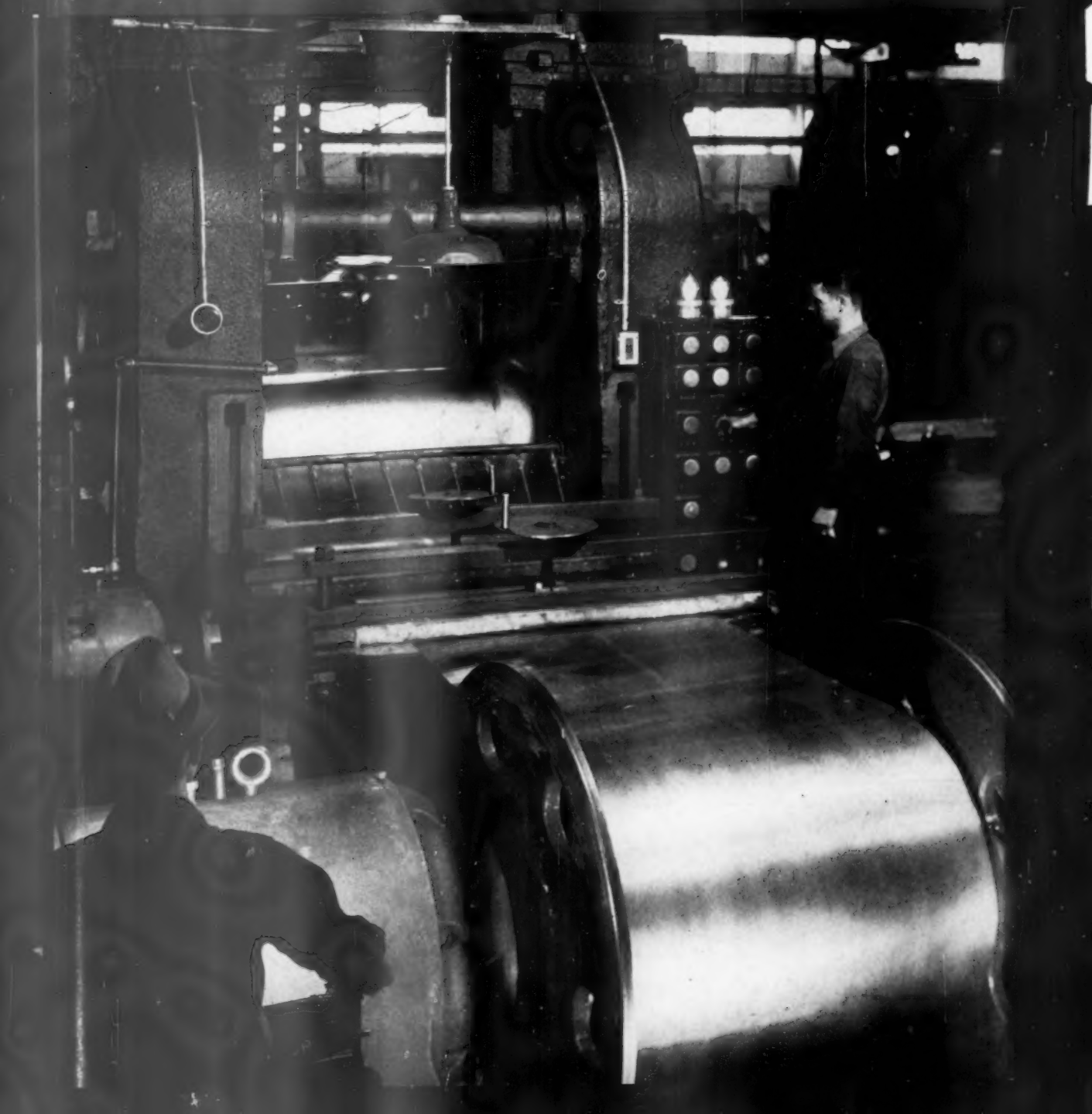
NOVEMBER 1950

National Safety News



NOW—One of the most significant advances in the history of artificial respiration!

The M·S·A Pneolator

AUTOMATIC ARTIFICIAL RESPIRATION without suction

SAFE — SIMPLE

POSITIVE — EASY-TO-USE

With the M.S.A. Pneolator, industry and the public services are presented a *perfected* automatic artificial respiration machine . . . SAFE to use because it employs *no suction* in restoring the breath of life to victims of respiratory failure.

The M.S.A. Pneolator requires no manual assistance—it does the whole job automatically, effectively, continuously, safely! *Write for the detailed story of this standout achievement . . . ask for the Pneolator Bulletin No. CH-1.*

Write for an actual Demonstration!

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS • PITTSBURGH 8, PA.

At Your Service:

54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

MonoGoggle*
Front and side protection

All You Need in Plastic Face and Eye Protection is made by

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FeatherSpec* for light operations

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WILLSON*
Dependable Products Since 1870

These three types of protective devices, all with one-piece plastic lenses or visors and each with many variations, give you a wide selection to meet specific requirements of work hazards. Their light weight and comfortable fit insure workers' willingness to wear them for long hours on the job. Complete information on plastic protection and other eye and respiratory safety equipment is available in the new WILLSON catalog. Get your copy from our nearest distributor or write direct to WILLSON PRODUCTS, INC., 205 Washington Street, Reading, Pa.

*T.M. Reg. U.S. Pat. Off.

For your convenience, Willson Distributors are listed on page 114.

NATIONAL SAFETY NEWS

Published monthly by the National Safety Council

NOVEMBER, 1950 **Vol. 62, No. 5**

***THE COVER:** Scene in the 96-inch continuous strip mill at Jones & Laughlin Steel Corp., Pittsburgh. There is no location in the mill where the average employee, such as the operator of the temper mill shown here, is exposed to high voltage. Control transformers have been installed in all 440-volt circuits where manual control is necessary, which reduce current to 220 volts at push-buttons.*

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27,800 copies of this issue were printed.

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Statements and opinions advanced in signed articles are the personal expressions of their authors, not necessarily those of the National Safety Council.

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In This Issue . . .

AS this issue goes to press the 38th National Safety Congress and Exposition is under way, with every prospect of exceeding previous Congresses in attendance, interest and significance. This preliminary report is necessarily confined to the opening sessions. More detailed stories and additional pictures will appear in December. (Page 18)

• • •

Not infrequently disasters focus attention on widespread neglect of even elementary precautions. One of the nation's worst hotel fires resulted in the establishment of reasonable but effective regulations in the State of Georgia. (Page 20).

• • •

Years ago, du Pont proved to the world that making explosives needn't be suicide. The same intensive effort has established notable safety records in the manufacture of a wide variety of products essential to modern living. (Page 22).

• • •

The second and concluding installment of "Mine, Ship and Mill," presents Bill Andrews' observations of safety procedure in the Pittsburgh mills of Jones & Laughlin. (Page 26).

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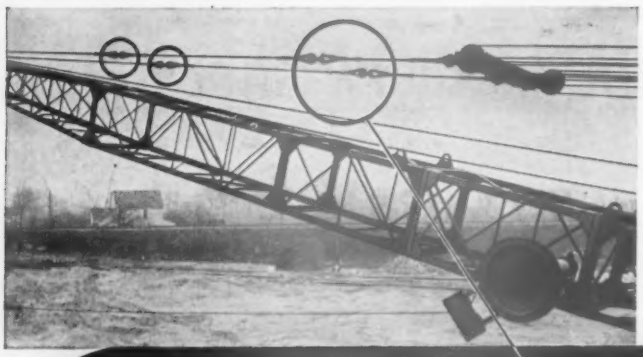
Lehigh Safety "Flight Boot"

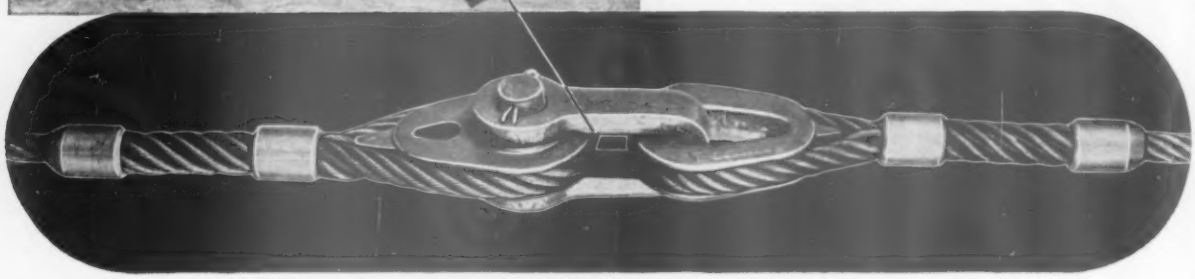
We've never seen such a reception such as this new boot has received from workmen in every plant where we've shown it. Originally inspired by the RAF flying boot, it has been widely adopted for sport and leisure wear. Now Lehigh adds the famous Lockrim* Steel Toe Box to bring new comfort, wider utility and handsome styling to the safety work shoe! Tens of thousands of men in industry who need the extra ankle-protection of a higher shoe, but who won't wear "old-fashioned" conventional styles will buy this smart 5-inch boot on sight . . . wear it for loafing and active sports as well as in the plant. See it . . . show it . . . right away!

*T. M. REG.

Stock No. 1619A Army russet 5-inch blucher-boot with rounded top, 3-eyelet lacing, oil-resistant composition soles and heels. Widths C, D and E—sizes 5 to 12.



DUALOC BOOM CABLES



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4 IMPORTANT ADVANTAGES—

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4 NO LOWERING OF WIRE ROPE STRENGTH. Strength in all parts equal to full catalog strength of the wire rope. You have all the advantages of these assemblies with full assurance of all the strength built into your equipment by the manufacturer.

DUALOC Boom Cables are ACCO-Registered. This is assurance of highest quality workmanship combined with top quality material—Preformed Green Strand Improved Plow Steel Wire Rope.

Write for this folder which gives more detailed information

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COPPUS "BLUE RIBBON" VENTILATORS

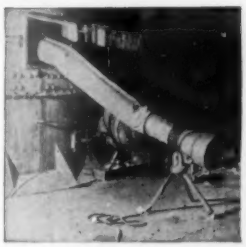
Identified by the blue band

FOR WORKERS'

- Safety
- Health
- Comfort
- Efficiency

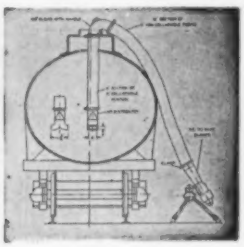
VANO Design "A" VENTILATOR

Vano Design "A" cooling interior of furnace, supplying fresh air through 10 feet of "Ventube" to provide safety and comfort during repair work.



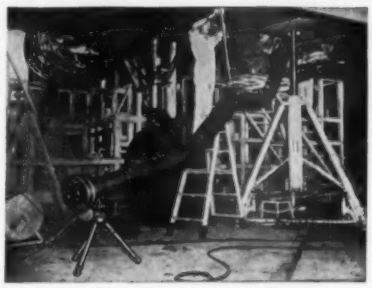
Vano Design "A" delivering fresh air to cable manhole, expelling sewer gas, making entrance safe in a few minutes.

Vano Design "A" Ventilator plus a few accessories feeds large air volume into tank car, driving out fumes, stagnant or hot air for workers' safety and comfort.



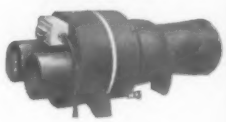
Vano Design "A" supplying fresh air in Reactor Room of Synthetic Rubber Plant.

Vano Design "A" Ventilator supplying fresh air to men working in wing compartments, fuselages, etc.



Powered by a ½ hp motor, and equipped with the exclusive Coppus axial-flow propeller-type fan, this general-purpose blower delivers 1500 CFM of fresh air. It supplies ventilation for tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments and fuselages, and other confined places. Weighs only 103 lbs. Uses 8"-diameter flexible canvas tubing ("Ventube").

VANO
DESIGN "C"



VENTILATOR-EXHAUSTER

Vano Design "C" equipped with 8" discharge tubing removing welding fumes.

Vano Design "C" equipped with two suction lines removing welding fumes for operators' safety.

For withdrawing welding fumes from confined places or directly from the welding rod ...or for expelling fumes or hot air from enclosed vessels. You can get it with 8" suction inlet for 8" non-collapsible tubing ...or with multiple inlet nozzles for 5", 4" or 3" suction hose. The discharge outlet takes 8" "Ventube". Powered by a ½ hp motor, it weighs only 85 lbs.

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Please send information on the Blowers that clear the air for Action.

- ☐ in tanks, tank cars, drums, etc.
- ☐ in underground cable manholes.
- ☐ in aeroplane fuselages, wings, etc.
- ☐ on coke ovens.
- ☐ on steam-heated rubber processes.
- ☐ on boiler repair jobs.

COOLING:

- ☐ motors, generators, switchboards.
- ☐ wires and sheets.
- ☐ general man cooling.
- ☐ around cracking stills.
- ☐ exhausting welding fumes.
- ☐ stirring up stagnant air wherever men are working or material is drying.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....

(Write here any special ventilating problem you may have.)

COPPUS "BLUE RIBBON" PRODUCTS—*Designed for Your Industry, Engineered for You*

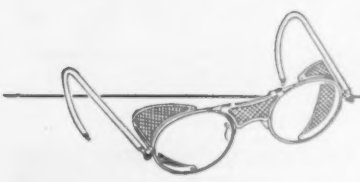
1 SELL EYE SAFETY TO EMPLOYEES
Ask your distributor's representative to show you the kit of posters, pay envelope inserts, PA system scripts and other material that sells workers forcefully on *desire to use* proper safety eyewear.

2 SAFETY GLASSES FOR EACH JOB
A complete range of Bausch & Lomb safety eyewear, engineered to meet the most rigid tests for each job classification in your plant.

3 PROTECTION *PLUS* CORRECTION
For at least 50% of your workers prescription lenses are necessary to working efficiency as well as to safety. Your B&L distributor offers prompt prescription service on all types of industrial eyewear.

YOU couldn't be bothered with those safety glasses, remember? So now things are different. This graphic story is one from a series told dramatically in poster, pamphlet and other form for use in educating your employees in rigid adherence to eye safety rules.

No eye safety program is *total* without worker education. Write Bausch & Lomb Optical Company, 681 W. St. Paul St., Rochester 2, New York, for complete information on a *total* eye service.



BAUSCH & LOMB *Safety Eyewear*

MACWHYTE WIRE ROPE AND SLINGS

engineered to save you money on the job

Ask Macwhyte to recommend the type and size of wire rope best suited for your needs. *There are a thousand and one wire ropes made by Macwhyte.*

Specifications for the correct sling for any lifting need are yours from Macwhyte for the asking.

Prevent loss!
Save time!
Be sure!

MACWHYTE WIRE ROPE:

Available in the complete Macwhyte line are Internally Lubricated *PRE*formed Wire Ropes for all equipment—plus Galvanized, Stainless Steel, and Monel Metal Wire Ropes. Also available are special assemblies of Macwhyte Wire Rope and Industrial Standards "Safe-Lock" fittings. Fittings are attached to rope by swaging—and assemblies are made to order.

MACWHYTE SLINGS:

Available in all types, sizes and lengths, to meet almost any lifting requirement. Macwhyte ATLAS Round-Braided Slings, Drew Flat-Braided Slings and Monarch Single-Part Wire Rope Slings are all made to order to fit your needs. Illustrated is a special Macwhyte Drew 14-part Type 1CT Flat-Braided Sling.

WHATEVER YOUR NEEDS

for wire rope, slings, special assemblies, solutions for special problems, ask a Macwhyte distributor or write direct to Macwhyte Company for suggestions and recommendations.

MACWHYTE COMPANY, 2902 *Fourteenth Avenue, Kenosha, Wisconsin. Manufacturers of Internally Lubricated Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal and Stainless Steel Wire Rope. Our distributors and mill depots throughout the U.S.A. and other countries carry stocks for immediate delivery. Catalog on request. Mill Depots: New York • Pittsburgh • Chicago • Minneapolis • Fort Worth • Portland • Seattle • San Francisco • Los Angeles*

FATAL SHIPYARD FIRE $150,000 LOSS, 1 DEAD

A general alarm fire which swept through the boatyard owned by [redacted] at East Norwalk, Conn. on April 10, caused the death of [redacted] and sent four Norwalk firemen to the Norwalk hospital suffering from severe burns received while fighting the fire.

The fire is believed to have started when a boat-owner, working in the bilge of his boat and using a hammer and chisel on an exhaust pipe, struck a spark which ignited fumes in the compartment.

Avoid $150,000 sparks in your plant

— USE AMPCO SAFETY TOOLS

How to choose Safety Tools

For tools subjected to impact and/or torque — specify tools of Ampco Metal.

For tools with cutting edges and gripping teeth — specify Ampco beryllium-copper tools.

For jobs around acetylene and certain other gases — specify Ampco Monel* tools.

*Trademark International Nickel Co.

A few dollars invested in non-sparking Ampco Safety Tools could prevent hundreds of costly fires and explosions which strike unexpectedly every day. That's why Factory Mutual Laboratories and other safety authorities approve and recommend Ampco Safety Tools for use in hazardous locations.

Equip your workmen with Ampco Safety Tools. You earn lower insurance rates, improve workers' morale for greater efficiency — and protect your plant against paralyzing disaster. Send for free Safety Tool Catalog.

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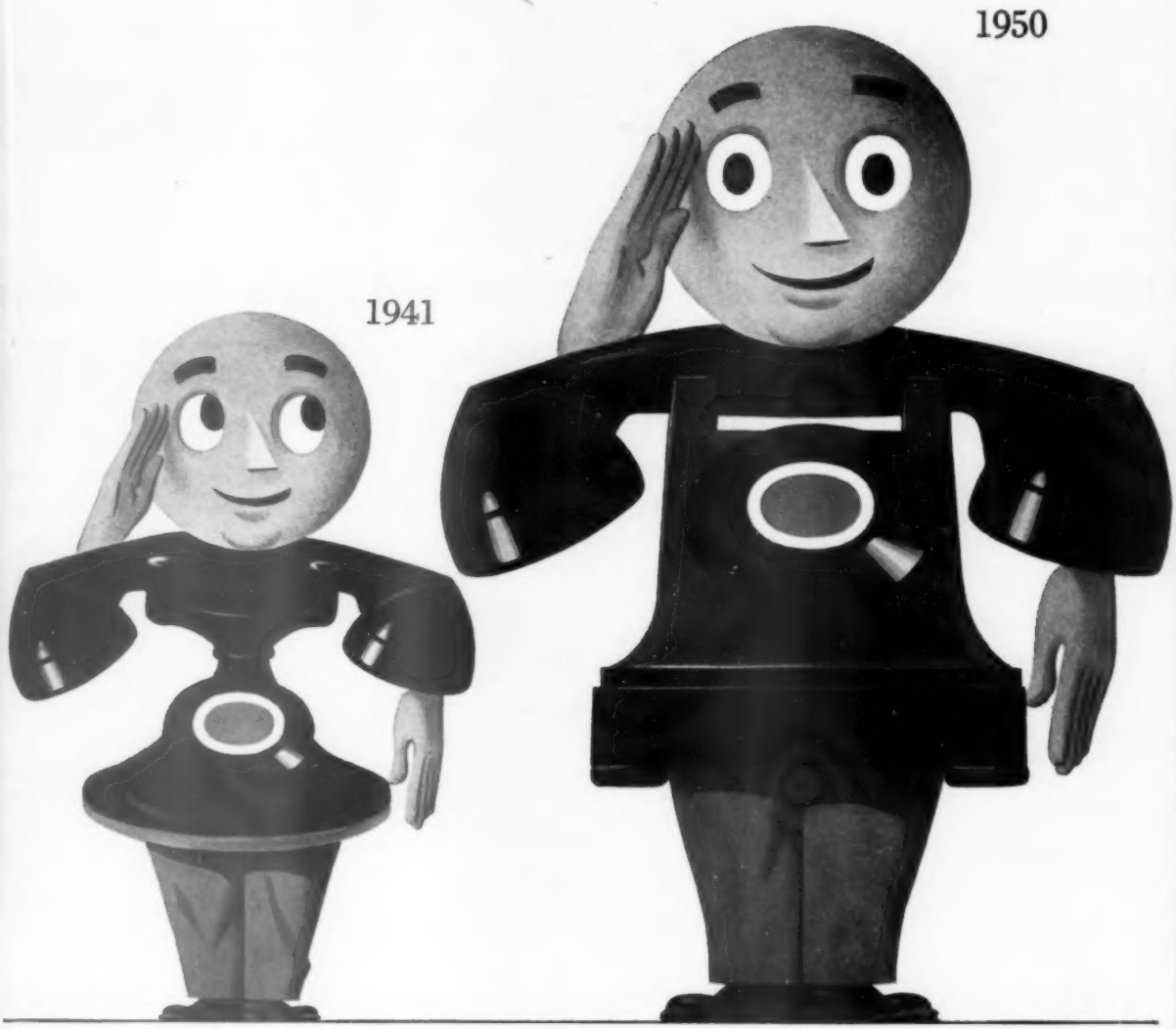
West of the Rockies, it's the Ampco Burbank Plant, Burbank, California



Good thing he's grown

He seemed like a big fellow in the rush days of 1941. But it's a good thing he's bigger today. For the telephone system of nine years ago couldn't possibly do today's job.

Since 1941, the Bell System has increased the number of telephones by more than 16,000,000. There are nearly twice as many now as nine years ago.

Millions of miles of Long Distance circuits have been added. Billions of dollars have been spent for new equipment of all kinds. The number of Bell Telephone employees has increased to more than 600,000.

Times like these emphasize the benefits of such growth and the value of a strong, healthy telephone company to serve the Nation's needs.

For now, more than ever, the Nation depends on telephone service to get things done and speed the job of defense.

BELL TELEPHONE SYSTEM

WATCHEMOKET eye SAVERS

T. M. Reg.

the finest in plastics for dependable eye-protection

MOLDED CURVED MODELS

Fit over most styles of rimless and metal-frame glasses.

MODEL 7 *(illustrated) Crystal clear plastic frame. Medium bridge size. Model 27 — large bridge size.*

MODEL 9 *"Blackout" plastic frame. Medium bridge size. Model 29 — large bridge size.*

MODEL 10 *Transparent green plastic frame. Medium bridge size. Model 210 — large bridge size.*

MODEL 1002 *Transparent green plastic frame and green Impax* plastic lens. Medium bridge size. Model 210G2 — large bridge size.*

SPECIAL EYE AND FACE PROTECTORS

MODEL 4456 *Opaque "blackout" frame and lens. Medium bridge size only. Ideal for checking furnace heat. Other models for aluminum-working, x-ray, laboratory and physical therapy work.*

SQUARE PLASTIC FACE-SHIELD *(illustrated)*

Non-distorting lens; for heavy-duty, full-face protection.

WELDING COVER LENS

Protects costly welding filters against pitting, hot metal splatters. Will not shatter under impact.

MOLDED SQUARE MODELS

Fit over most styles of prescription glasses.

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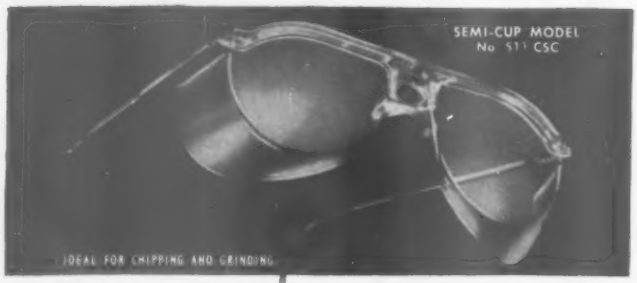
MODEL 3-N *"Blackout" plastic frame. Medium bridge size only.*

MODEL 30 *Extra-wide, crystal-clear plastic frame. Extra-large bridge size. Fits over widest safety lens spectacles.*

TUC-AWAY new lightweight, spectacle-type eye savers*

T. M. REG.

Extra-strong Plexene* plastic frame **(511)** shown with Semi-Cup lenses—has Retrax* metal temples with telescoping adjustment for perfect fit. (Frames also available with plastic club temples: Model 510).



Shatterproof methacrylate lenses are optically correct and can be replaced instantly.

5 colors: CLEAR, LIGHT GREEN, MEDIUM GREEN, DARK GREEN, COBALT BLUE

ONE FRAME CAN BE USED INTERCHANGEABLY WITH THREE TYPES OF LENSES:

with REGULAR SIDE SHIELD LENSES for ordinary eye hazards — MODEL 511 CSS

with FULL (1") SIDE SHIELD LENSES for complete side protection — MODEL 511 CSSF

with NEW SEMI-CUP LENSES over 90% PROTECTION— MODEL 511 CSC

ALL EYE SAVERS LENSES ARE SHATTERPROOF • OPTICALLY CORRECT • INSTANTLY REPLACEABLE *T. M. REG.

*T. M. REG.

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NOW! for floors that must be extra safe

★ NEW JOHNSON'S SLIP-RETARDANT Shur-tred

At last! A tough, brilliant floor finish that positively reduces slip hazards*

Extra safe

It's new! Johnson's Shur-tred drastically reduces slip dangers... on all types of floors... under all conditions of temperature, humidity, maintenance!

New Shur-tred takes the hazard out of problem floor areas. It has undergone rigid tests on stairways, ramps, and other trouble areas. Shur-tred has been thoroughly tested *on the floor* in hospitals, schools, and business places.

No other finish offers this combination of features!

See for yourself what Shur-tred can do. Mail the coupon for a *free demonstration.*

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***After a rigid test, Milwaukee's Curative Workshop writes: "Shur-tred has met our need of a non-skid surface on which our paralyzed patients may safely have walking training."**

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In addition to *extra safety*—new Johnson's Shur-tred gives you *all* the qualities for which Johnson's No-Buff Floor Finishes are famous: brightest shine . . . toughness . . . water-resistance . . . quick drying . . . easy application. It is *not* tacky, *not* gritty.

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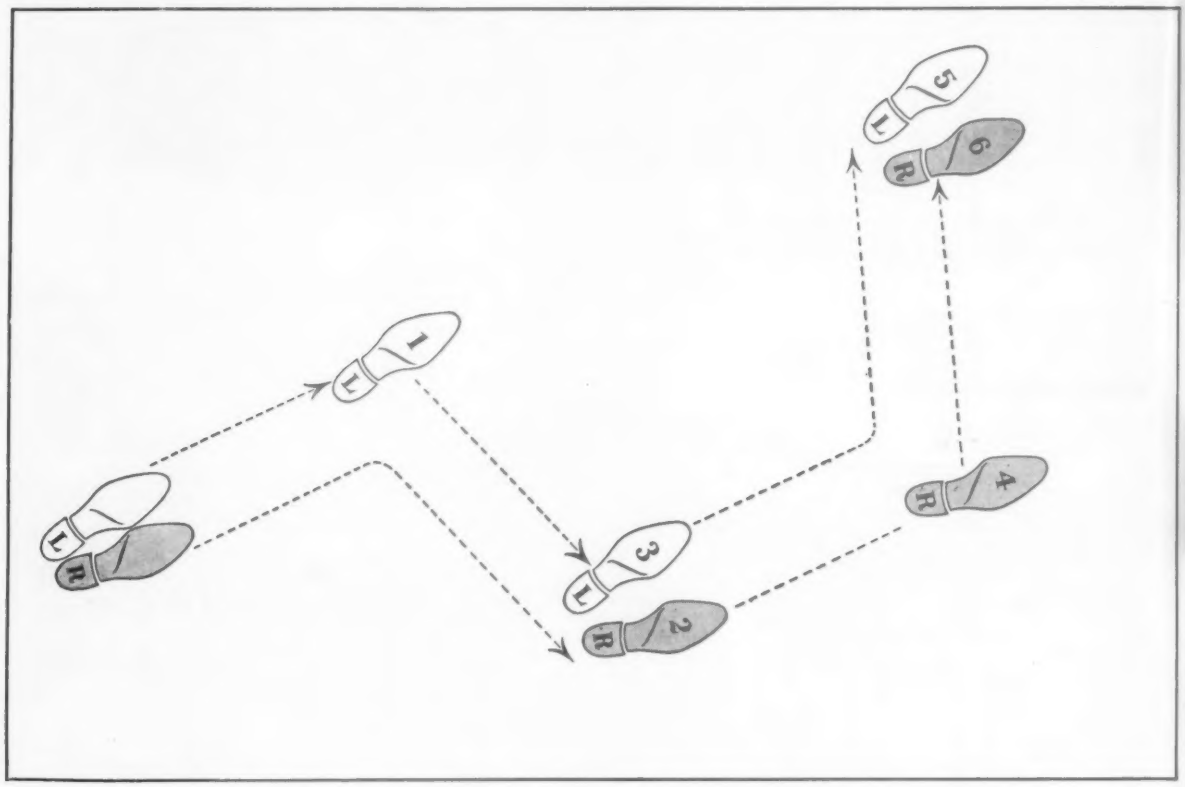

It only takes a few minutes to learn the right steps!

DANCING IS EASY—once you learn what steps to take.

The same holds true for saving money for the future.

It will take approximately two minutes to find out how you can invest in either one of the two *automatic* plans offered by U. S. Savings Bonds.

Inquire at your place of business about the Payroll Savings Plan. Learn how easy, convenient, and *painless* it is to put aside savings for Bonds right from your paycheck.

Or, if you have a checking account, ask at your bank. They'll explain all about the Bond-A-Month Plan, in which you use your checking account as a means for investing in U. S. Savings Bonds.

Both plans are simple, and call for no effort on your part. Both plans add up to the same thing—money to live on in the future.

So start finding out about them. Remember, it only takes two minutes today to learn how you can make your tomorrows a lot more carefree!

Automatic saving is sure saving—U.S. Savings Bonds

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COMFORT AND VALUE

No. 921—A brown dress blucher oxford. SAFTOPEDIC last and construction, combination fit. Lightweight, comfortable.

. 600—The Hi-Lo safety
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es the freedom of an ox-
d with the support and
rection of a high shoe.

No. 618—A comfortable, stylish moccasin oxford in colorful burgundy elk. Has long wearing "Leatherplus" outsoles, rubber heels.

No. 698—A black elk blucher with two full leather soles, rubber heels. Outsole is "Leatherplus". An outstanding value in a conventional work shoe.

No. 683—A brown elk lace-to-toe blucher with "Neo-Cord" sole and heel. Comfortable, flexible, long wearing.

Boost Your Coverage with the five latest Iron Age styles pictured here. Just stock and display these value leaders. Then watch how even the "die-hards" to the safety shoe idea will be swayed by their purchase-impelling appearance and quality features. Experienced Iron Age representatives are located in all industrial areas. There's one near you. Write us and we will have him show you the complete line and fully explain the many advantages of stocking Iron Age Safety Shoes.

Iron Age Division, H. Childs & Co., Inc., Pittsburgh 22, Pa.

Iron Age **SAFETY SHOES**

PITTSBURGH 22, PA.

Iron Age

The Safety Shoe for Industrial America

for industrial *First Aid*

MERCUROCHROME*

(H. W. & D. BRAND OF MERBROMIN, DIBROMOXYMERCURIFLUORESCEIN-SODIUM)

Do not neglect wounds, however small; even scratches and small cuts may become infected if they are not promptly and properly treated.

'Mercurochrome' (H. W. & D. brand of merbromin, dibromoxymercurifluorescein-sodium) is one of the best antiseptics for first aid use. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association for this purpose.

The 2% aqueous solution is not irritating or toxic in wounds; minor injuries are reported more promptly when 'Mercurochrome' is the routine antiseptic, because treatment is not painful.

'Mercurochrome' solution keeps indefinitely; the color shows where it has been applied.

Physicians have used 'Mercurochrome' for more than 28 years.

Be sure to include 'Mercurochrome' in your first aid supplies.

*Reg. U. S. Pat. Off

HYNSON, WESTCOTT & DUNNING, INC.

H W D BALTIMORE, MARYLAND

IMPROVED DISCHARGE PATTERN

. . . gives Kidde Dry Chemical Fire Extinguisher a 44% margin of safety!

The Factory Mutual Laboratories require that a 20 pound dry chemical fire extinguisher effectively cover 25 square feet of burning area . . . but the *Kidde* 20 pounder blanketed 36 square feet . . . *gave 44% extra coverage, extra safety!*

Kidde Dry Chemical Fire Extinguishers are quick and sure for fires in flammable liquids, live electrical equipment and for textiles. *Kidde* Trigger-Finger Control lets you just pick up extinguisher, point the horn and pull the trigger. *Kidde* streamlined diffuser horn gives you improved, cloud-like discharge pattern, greater coverage, and a heat-insulating blanket to guard the operator. The dry chemical absorbs heat, smothers flames, reaches corners, cracks, crevices. When these *Kidde* units go on, flames go out.

Kidde Dry Chemical Fire Extinguishers in 20 and 30 lb. units, are built to last, easy to use, simple to recharge . . . and give you a big margin of safety. Use the right kind of extinguisher for the right kind of fire—use *Kidde*.

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NATIONAL
SAFETY NEWS

NOVEMBER, 1950

My Personal Thanksgiving

CONGRESS Week is never the easiest week in my year.

It is packed with concentrated activities. It requires the kind of close scheduling that makes a man a slave to his secretary's watch. And it can be an especially frustrating time when I miss meeting old and new friends whose schedules cannot be reconciled to mine, nor mine to theirs.

And yet, each National Safety Congress brings me new cause for thanksgiving. Each year I am conscious of the growing strength of the safety movement, represented and typified by the men and women who come to the Congress.

I always approach a new Congress with a sense of loss, knowing that some familiar faces will be missing and that some of our wheelhorses will, at the Congress itself, step down and turn their responsibilities over to others.

But the end of the 1950 Congress reaffirms my basic optimism about our work. For during Congress week I met scores of new leaders in our movement, men who have demonstrated to all of us their fitness to carry on in place of those who held the same offices and board and committee assignments in previous years.

The deliberations of the 1950 Congress were, I believe, constructive and intelligent. It is not possible for any one man to see more than a small portion of any Congress, but what I saw and heard convinces me that the National Safety Council—which is, after all, simply you people and the organizations and companies you represent—is growing in strength, wisdom, and influence.

It is all of you who came to the Congress, and the thousands who were not able to be present this year, but who serve the cause of accident prevention.

We all know that in a troubled world we cannot be smug or self-satisfied. The problems and challenges which confront us are growing in seriousness and urgency.

But I can approach this traditional season of Thanksgiving with a deep and sincere sense of gratitude to the God who guides us and to all of you who are making possible an ever-more-effective fight against the evil of accidental slaughter.

Ned H. Dearborn

Friday, October 20, 1950

Monday morning at the registration desk in The Stevens.

World Safety Stressed As 38th Congress Opens

Charles R. Cox new chairman of Board of Directors; Irvin and Dearborn re-elected, as 12,000 delegates meet in Chicago

Chicago, October 16

Each of us, no matter how inconspicuous he is, no matter how humble his circumstances, can contribute in one of the most important areas of American strength — the welfare of the individual through accident prevention.

That was the thought which President Ned H. Dearborn of the National Safety Council left with his audience at the close of his address at the Annual Meeting of the Council, the opening session of the 38th National Safety Congress.

With the background of a world disrupted by ideologies that threaten the peace of nations and deny the dignity of the individual, it was appropriate that the messages of the speakers should analyze and interpret the forces and philosophies behind the current situation.

From London, Wallace B. Phillips, American-born chairman of the National Executive Committee of the Royal Society for the Prevention of Accidents, brought an account of post-war conditions in Great Britain and the continent of Europe.

In addition to his description of post-war highway traffic in the British Isles, on roads that have not been enlarged since the war, Mr. Phillips dealt with some of the problems of world safety.

Dollars alone will not buy safety from the threat of communism, he warned. It is what America herself actually does that matters.

"Too many Americans believe that European ideologies, ambitions, and political objectives can be made to conform to those of America," he said. "Forty years of residence and work in Europe have taught me this is not, and I fear never will be, so."

In his address, President Dearborn sketched the origin and development of philosophies that have moulded thought and influenced the destinies of United States, Great Britain, France, Germany and Russia, culminating in the Anglo-Saxon ideal of political freedom and the Russian concept of the all-powerful state. He felt that a balance between the concepts of group welfare and individual freedom can be achieved without compromising the American way by any communistic dilution.

As the Annual Meeting was called to order, thousands of delegates were arriving from all over the country and from Canada. Conspicuous among them were the uniforms of the armed services. Registration desks were jammed in four hotels—the Stevens, Congress, La Salle and Morrison.

Officers Elected

Preceding the addresses at the Annual Meeting was the election of officers. The slate of officers and board members presented by Franklin M. Kreml, chairman of the nominating committee, was unanimously accepted by the delegates.

Succeeding James Tanham as chairman of the Board of Directors is Charles R. Cox, president of the Kennecott Copper Corporation, New York. Ned H. Dearborn was re-elected president.

J. E. Trainer, vice-president and production manager of The Firestone Tire & Rubber Company, Akron, Ohio, was elected Vice-President for Industry.

All other Council officers were re-elected. A complete list of the officers and members of the Board of Trustees and Board of Directors appears at the end of this report.

In keeping with the trend that industrial safety can be promoted most effectively at the State level, as emphasized at the President's Conference on Industrial Safety, the address of Miss Marion E. Martin was timely and significant. As Commissioner of the Department of Labor and Industry of the State of Maine, she has been unusually successful in building up a cooperative spirit between industry and the department. Success of the program has required a sympathetic understanding of industry's problems, particularly those of the small plant.

The Exposition

This year's Exposition was a "double-header." In previous years the industrial exhibits were housed in the Stevens, and the public safety displays in the remote Sherman. This year products for both fields were also on display at the nearby Congress Hotel. There were more exhibits this year, including those of many new products, as well as the familiar standard items. Particularly striking was the exhibit of the Industrial Safety Conference at the Congress Hotel.

Before the official opening of the Congress Monday morning, a vast amount of important business had already been transacted. On Sunday the Industrial Conference had met to discuss reports of the various sections and made plans for the coming year's programs. The Annual Conference of Safety Council Managers met Friday and

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Mrs. George W. Jaqua, vice-president for Women's Activities, welcomes the ladies to a reception at the Sheraton Hotel.

President Ned H. Dearborn welcomes delegates to the Annual Council Meeting. At the left is Miss Marion E. Martin, Commissioner, Department of Labor and Industry, State of Maine.

Wallace B. Phillips, chairman of the Royal Society for the Prevention of Accidents, brings a message from overseas.

GEORGIA TIGHTENS UP ON FIRE SAFETY!

By DALE MEDSKER

A disastrous hotel fire, the second in Atlanta's history, led to adoption of reasonable but effective regulations

After leaving the Army in 1946, DALE MEDSKER joined the safety engineering staff of National Surety Corp. in Atlanta. As area engineer for the corporation's Southern Department he has been active in the Greater Atlanta Traffic Improvement Association, Greater Atlanta Safety Council, Georgia Chapter American Society of Safety Engineers, and Georgia Casualty Engineers Association. He represents the casualty insurance companies on the State of Georgia Fire Safety Board.

ON December 7, 1946, Georgia suffered the greatest hotel fire in the history of this country. In the early hours of that fatal morning 119 lives were snuffed out. This was the second great hotel fire that had occurred in Georgia; for a few years before the Terminal Hotel had burned with a loss of 35 lives.

Although this tragedy had struck down many young people from all parts of the state, the authorities were not stampeded into quickly passing stop-gap legislation. The facts of the fire were gathered and thoroughly sifted. The facts revealed by the other fire tragedies in other parts of the country were also considered before any action was taken.

The first steps of corrective action were taken by certain cities. Foremost among them was Atlanta which modernized its building ordinances and reinforced its building inspection program. Atlanta became notably tough but fair in the inspection of buildings of high life hazard.

The state legislature, as a result of public demand, passed a law known as the Georgia Building Safety Law. This law created the Office of the Georgia Building Safety Director and appointed the insurance commissioner, by virtue of his office, to devise and enforce such safety regulations as the commissioner and a Building Safety Council deemed necessary.

A twelve-man board, consisting of various professional architects and engineers, drafted rules and regulations under this act which were placed into effect by the commissioner.

After eight months of attempting to enforce this law, it was found that it was too drastic, too iron clad and, in many cases, extremely unreasonable.

Zach Cravey, the insurance

The Winecoff Hotel fire, one of the nation's worst, took 119 lives in December, 1946. This disaster led to progressive fire safety legislation in the state. (Photos by Atlanta Journal.)

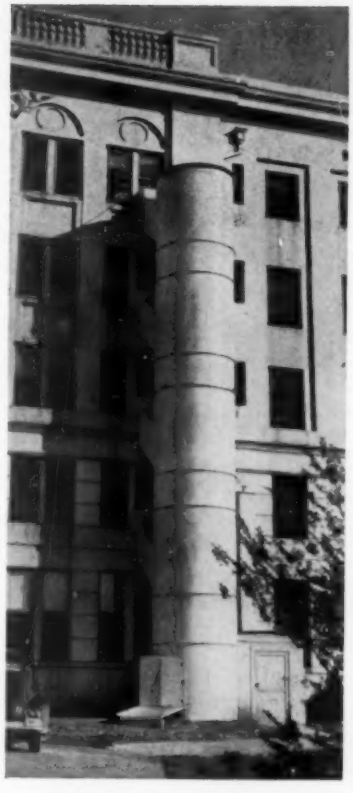
commissioner and the state officer charged with administering the law, quickly recognized the shortcomings of this statute. He early expressed the opinion that this unflexible law could, if enforced, do more to retard fire safety than to promote it. After consultation with many interested groups the commissioner declared a moratorium on the enforcement but requested all concerned to abide by the principal of the law. A few weeks later the state legislature in a special session passed a resolution officially declaring the moratorium until such a time as they were in regular session to consider amending the act.

In February, 1949, the legislature, in regular session, repealed the old Building Safety Law in its entirety and adopted a completely new law known as the Georgia Safety Fire Law. This new law had been drafted by the commissioner and his staff after many conferences with all interested groups.

The new law created the Office of Georgia Safety Fire Commissioner and designated the insurance commissioner as such. It further provided for the appointment of a state fire marshal with the necessary technical staff. To aid the commissioner and fire marshal, an advisory board was created. This advisory board is one of the unusual features of the law for it establishes the right of the interested groups to be officially represented in the enforcement of law and the resulting regulations. The board consists of a fire chief from a large city and one from a smaller city; a city building inspection official; a fire prevention engineer from a fire insurance company; a safety engineer chosen from the casualty insurance companies; a city electrical inspector; a city heating inspector; a representative of the Georgia Real Estate Association; one member from industry; one member to represent labor and one member to represent the owners of life-hazard buildings.

An appeals board was also established by this law to hear all appeals from decisions of the state fire marshal. The decisions of this board are final, except insofar as a court of competent jurisdiction might modify or reverse their decisions.

This new law is based upon the American Standards Association Building Exits Code. After a year of trial and enforcement the law has been found to be adequate, reasonable and sufficiently flexible to win the cooperation of property owners and the general public. It is not too early to state that this law is achieving its goal and is fulfilling the purpose for which it was created.



An outside fire escape installed at the Georgia Baptist Hospital which complies with the state fire safety law.

The commissioner, in setting up the Department of the State Fire Marshal, selected men with both practical and technical backgrounds. F. E. Robinson was named fire marshal and F. P. Reinero was named the deputy fire marshal. A competent staff of technicians has been employed to carry out the enforcement features of the law.

After organizational meetings were held with the advisory board, the fire marshal's staff was put to work doing research into codes of other states and national fire prevention organizations. This research was in effect the activation of one phase of the law which empowered the commissioner to promulgate reasonable rules and regulations governing hazards to life due to fire or explosion.

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The Terminal Hotel fire in May, 1938, in which 34 lives were lost.

The du Pont Safety Story

By HAROLD L. MINER

Since the first powder mill was built in 1802, elimination of operating hazards has been a constant objective of the company

IT appears impossible to fix a definite date for the birth of the safety movement in American Industry. However, when E. I. du Pont de Nemours erected his first powder mill in 1802 on the Brandywine Creek near Wilmington, Delaware, the powder buildings were constructed of heavy stone masonry on three sides. The fourth side was open and facing the Brandywine Creek, so that the force of an explosion would be directed where it would do the least harm to workmen and property.

The first du Pont powder mill erected in 1802 on the Brandywine Creek. Left: Eleuthere Irenee du Pont de Nemours, founder of the company.

Many incidents have been recorded indicating the founders' awareness of their responsibility for the safety of their workmen and the public.

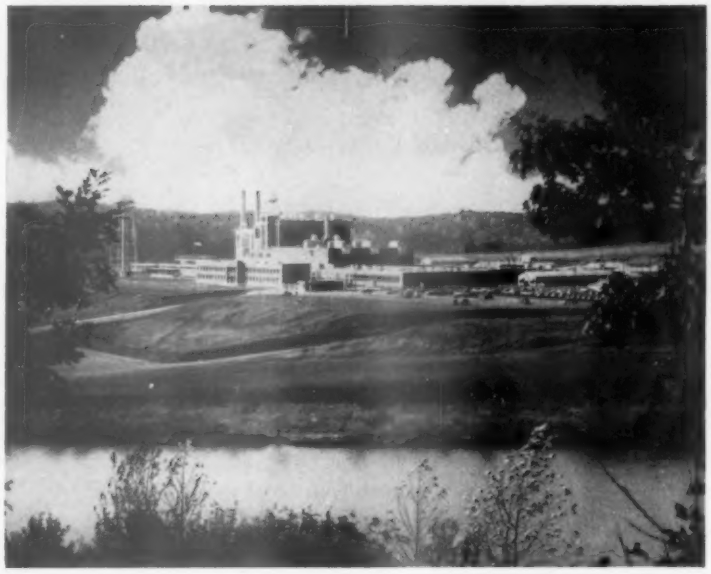
In the early years safety consciousness as a term was not specifically identified as such with the prevention of occupational injuries to industrial workers. However records and incidents show that safety consciousness was a motivating influence in the policy and actions of these early du Ponts. From the very beginning no employee, even though experienced in the manufacture of powder, was permitted to start making powder in a new or rebuilt mill until one of the executives had personally operated it.

In 1835 black powder for use on the *U. S. Constitution* was shipped part of the way from Wilmington to New York by rail in boxcars over which damp cloths were placed to minimize the hazard from flying sparks and the locomotive was coupled to the train at the rear.

In 1865, General Henry du Pont refused to have anything to do with Alfred Nobel's patented process for the manufacture of nitroglycerin, known as Swedish "blasting oil." The General considered it so dangerous that he stated it was only a matter of time how soon a man who used nitroglycerin would lose his life. After several serious explosions, including Nobel's own factory with much loss of life and property, an absorbent was introduced which diminished the sensitiveness of the nitroglycerin. In 1876 General du Pont sanctioned the manufacture of dynamite.

It is also recorded that in 1883 when rebuilding a grinding mill which had been destroyed by fire, it was equipped with horseshoe magnets to remove tramp iron which might escape detection.

HAROLD L. MINER is Manager, Safety and Fire Prevention Division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.



Nylon has become one of the most important of du Pont's varied products. Above is a view of the nylon plant at Martindale, Va.

Another record notes that the eldest grandson of the founder worked daily for years with the powder men looking for opportunities for improving efficiency of the machinery and to increase the safety of the operation.

What is commonly known as workmen's compensation (monies paid to, or care taken of a workman or his dependents when injured in the course of employment) was first recognized by law in England in 1880. But, half a century before that time the du Pont Company recognized and accepted such responsibility in caring for the maimed and the superannuated by keeping them on the payroll at easy tasks and taking care of the families of those "bereft of the sole breadwinner according to their needs." The first effective compensation legislation in the United States was enacted nearly one hundred years later.

Review of early experience reveals that emphasis was placed on guarding or protecting the obvious hazards. Some use was made of spiked feet for ladders; cage guards for belts, pulleys and moving machinery; handrails; guards for machine tools such as circular saws, jointers and grinding wheels; protective clothing such as rubber gloves, aprons, leggings, special shoes, etc. Little or no thought was apparently given to employee attitude in the prevention of personal injuries.

In 1904 the carrying of matches in du Pont plants was prohibited; special shoes and clothing were provided for powder workers, and emergency water tubs were installed for acid splashes or clothing fires. It had become apparent that mechanical guarding would prevent only certain types of injuries and that if personal injuries resulting from indifference, thoughtlessness, chance-taking, etc., were to be eliminated, something had to be done to improve the safety attitude of the workers.

Safety as a part of operating procedure was discussed at superintendents' meetings as early as 1904 but was not actually included in operating procedures until 1911 when safety commissions composed of operating and main-office executives were appointed to study and promote personal-injury prevention measures. These commissions promulgated formal rules governing certain operating methods and practices; prepared standard drawings for mechanical safeguards; introduced injury report forms and methods of tabulating injuries; made plant and equipment inspections and supervised other related plant-safety activities.

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Recent presidents of the du Pont Company whose leadership has helped shape safety policy. Left to right: Pierre S. du Pont, 1915-19; Irenee du Pont, 1919-26; Lammot du Pont, 1926-40; Walter S. Carpenter, Jr., 1940-48, now chairman, Board of Directors; Crawford H. Greenewalt, president of the company since 1948.

Better Light at the Mine Face

By G. F. PRIDEAUX

Controlling dust and increasing reflection factor by whitewash or rock dust are important in using light from cap lamps and headlights

THE NEED for improvement in illumination at mine face areas is substantiated by recent brightness measurements. Average brightnesses were found to be about 1/10 footlamberts. Comparable readings taken in heavy industries, foundries for instance, are 50 times as high. In a number of industries they are 500 times as high, or 50 footlamberts. The 1/10 footlambert was for the visual field. Surfaces removed from the center were usually much less bright.

G. F. PRIDEAUX is with the Lamp Department, General Electric Company, Cleveland, Ohio. This article has been adapted from a paper presented at the Coal Mining Section, 38th National Safety Congress.

If we visit the working faces of bituminous coal mines in the United States we are apt to find that the only light sources in these areas are the miners' cap lamps. True, many cutters, loaders and other machines are sold with headlights, but for one reason or another, these lamps are either out or missing after they have been in service for a short length of time. In a few instances you will find the lamps operating but giving very dim light.

Considerable vibration is found on such machines. This vibration has been very hard on the filaments of lamps not designed for such severe service conditions. One of the stronger lamps frequently found on machines is the 94-watt street railway headlight lamp. This is more apt to be burning than the general service sources but the light is often feeble due to low voltage at the socket.

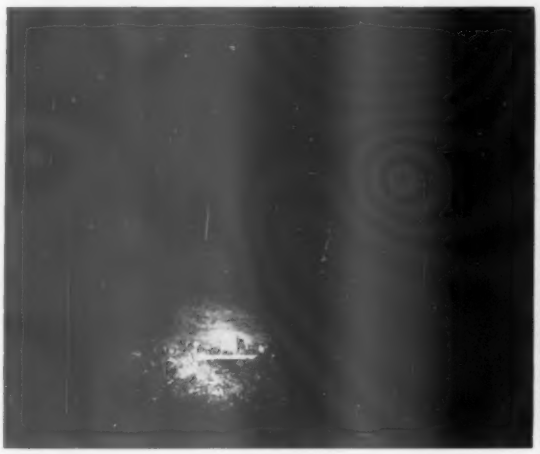
Further reasons for absence of other lights in this service might be the Federal Mine Safety Code Regulation for Bituminous Coal Mines. Under Section 11, Underground Illumination, Paragraph B, we find: "Electric lights shall not be installed within 150 feet of pillar workings or advance workings."

Bureau of Mines Bulletin No. 441 contains quite a complete discussion of permissible electric mine lamps; signal lamps, flashlight and handlamps are covered, as well as cap lamps.

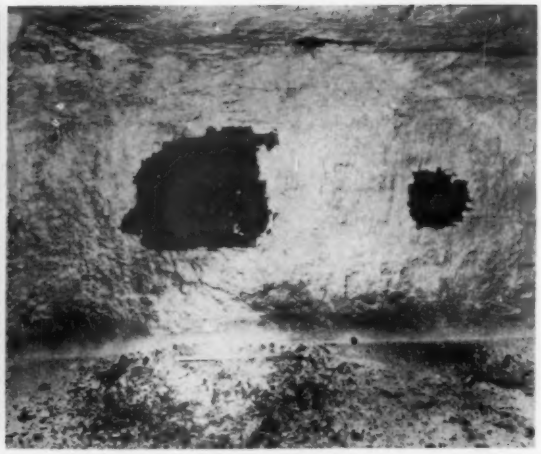
In Mr. Graham Bright's paper

Mine face after coal had been picked off to form a small pile on floor. Pick handle is partially covered. Cap lamp with maximum beam of 56 candlepower and mat reflector furnished light. Visibility readings of lump coal averaged 1.15.

Same area after whitewashing. Whitewash did not dry white because water vapor in ventilating air condensed on walls and prevented drying. Visibility readings on similar lump of coal after whitewashing averaged 1.38.



Face lighted by cap lamp with polished reflector. Maximum beam candlepower measured 740. Visibility level of lump of coal was 2.6. Room was then rock-dusted with portable rock duster using about 75 pounds of white rock dust.



After rock dusting. Visibility reading on lump of coal was 2.86. Reflection factor of room was originally 5 per cent or less. Reflection factor of wet whitewashed room was between 25 - 30 per cent. With white rock dust, it was 75 per cent.

Trends in Underground Lighting, Technical Publication No. 658 of the American Institute of Mining and Metalurgical Engineers, 1935, we find that the maximum beam candlepower of electric cap lamps steadily built up from about 2 candlepower in 1915 to 60 candlepower in 1934.

Currently, a lamp with mat-finished reflector has a maximum beam candlepower of about 40, one with a semi-mat-finished reflector about 200, others with specular reflectors about 600 and lamps recently introduced with focusing features produce a maximum beam candlepower of about 2000.

Maximum beam candlepower however is not a complete criterion. The light output of the headpieces has gone up from about 4 lumens in 1915 to 30 or 35 lumens with the late-model lamps. The Bureau earlier limited the ratio of maximum beam candlepower to mean candlepower through the beam 5 to 1.

Recently, I understand, they have increased this permissible ratio to 25 to 1 and have accepted the extremely high ratio found in the late lamps with polished reflectors. The latter are intended for special rather than general service. It is surprising, however, how many of the men express preference for these high-powered spots.

A good account of the lighting in British mines is contained in the Technical Advisory Committee's 1935 report on Coal Mining. Their long wall faces seem better adapted for power line lighting and it is not surprising to see that they have made and are continuing numerous experiments on face lighting from power mains to supplement portable and cap lamps. Several methods have been proposed for lighting fluorescent lamps from the a-c power lines.

Exploratory tests which we conducted with Mine Safety Appliances Company and the Bureau of Mines a number of years ago indicate fluorescent lamps can be broken in explosive atmospheres without ignition of gas, providing instant-start type circuits are employed rather than pre-heat type circuits.

At a meeting of the British Illuminating Engineering Society in January, 1949, Mr. Richard Crawford, secretary of the Technical Advisory Committee, reported that face lighting from power mains was more prevalent on the continent. He attributed its success to the absence of shot firing at the face, a practice common in Britain.

Other lamps experimented with included incandescent operated from mains and air driven generators along with mercury lamps operated from air-driven generators. A few of the fluorescent lamps are operated from air generators.

Fundamentals of Seeing

Four factors should be emphasized:

1. Size. It does not appear that there is much we can do about the size of the visual task. The size of the rail spikes, drills, cutter bits, timbers, lumps of coal, and machine controls will remain pretty much the same.

2. Time. We would like to reduce the time to load out a ton of coal. Improved illumination would enable us to see quicker.

3. Brightness. Here light plays an obviously important part. Generally the more light falling on an object, the brighter it becomes. If a very small amount of light falls on a very dark object, too little light may be reflected from it to our eyes to permit positive seeing.

4. Brightness Contrast. This is the ratio of the brightness difference (between the object and its background) to the brightness of the background. It is conveniently expressed in per cent.

As we visited the faces of mines

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NIGHT view of J & L's Pittsburgh Works, straddling the Monongahela River.

MINE SHIP AND MILL

By BILL ANDREWS

A NATIONAL SAFETY NEWS ***Field Report***

PART II

JONES & LAUGHLIN'S three steel mills achieved the best safety record in company history in the first half of 1950.

Two points which may explain this good record stand out in my mind. The first is that J & L's headquarters safety staff has developed a reasonable, practical outline of a plant safety program, has convinced mill managements that it will work, and follows up on its execution in an effective, helpful way.

The second is that J & L operating executives give unlimited aid and encouragement to department superintendents in accident prevention measures.

EDITOR'S NOTE: *This is the concluding installment of an article based on an inspection of Jones & Laughlin's safety program. The previous installment covered mining operations on the Mesabi Range and safety work on a J & L steamer hauling iron ore down the Great Lakes.*

I want to discuss this second point first, giving a few examples.

Meet, for a starter, H. W. Callahan, superintendent of the cold finishing department of J & L's Pittsburgh Works. He has none of the look of a fanatic on any subject —actually, he's the physical type you might expect to find at an executive desk in a strong bank.

But as a reporter who has listened to many management and safety men explain why certain things were impossible, I've learned enough to know that Mr. Callahan's views are extreme—and would be branded in some circles as visionary.

By the loading dock of the department stand hundreds of coils of cold rolled steel. Every square inch of that steel has been soaked in oil to prevent rust in storage and shipment. And an assortment of highly flammable packing materials is on hand.

But if you go snooping as I did, prying into corners, peering under

TOP: Employees' entrance, the tin plate mill of Aliquippa Works. Note the guard rails, and the wording of the sign.

CENTER: Mesh masks and heavy gloves protect draw bench workers at a butt welded pipe furnace at Aliquippa Works.

BOTTOM: Spotless housekeeping, brilliant color painting, make this J & L cold finishing department a pleasant, safe place to work.

racks of oily steel, you make the astonishing discovery that this area is spotlessly clean. I don't know how much labor Callahan puts on the clean-up job, but it must be plenty!

Accompanying this article is a photograph of the main shop area of the cold finishing department. The excellent housekeeping the photo shows persists—I can vouch for this on the basis of an unannounced visit.

But what the photo doesn't show is the spectacular and successful use of color throughout the shop. To eyes accustomed to the black and grimy grey of the typical heavy industrial operation, the restful green highlighted with warning orange at danger points of machines is startling.

It startled the men in the department, too. They greeted its arrival with all the usual cynical and ribald remarks about "painted

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Grounding of Portable Electric Equipment

425 North Michigan Avenue, Chicago 11
Published by National Safety Council

1. Ungrounded portable electrical equipment, if defective and used where resistance to ground is low, can cause burns and shock which may be fatal. Moreover, numerous industrial injuries can be traced directly to a noninjuring electric shock. For example, a workman was injured when he dropped an electric drill on his foot after receiving a relatively small amount of current from the defective frame of the ungrounded tool.

2. Serious electric shock is not entirely dependent on the voltage of the power input. The ratio of the voltage to the resistance determines the current that will flow and the resultant degree of hazard.

$$\text{Current through body} = \frac{\text{Voltage applied to body}}{\text{Resistance of body and contact}}$$

Figure 1. Defective cord in handle of electric drill. The exposed live wire at the connection makes contact with the metal framework of the tool.

This Data Sheet is one of a series published by National Safety Council. It is a compilation of experience from many sources. It should not be assumed that it includes every acceptable procedure in its field. It must not be confused with American Standard Safety codes; federal laws; insurance requirements; state laws, rules and regulations; and municipal ordinances. Reprints of all Data Sheets are obtainable from National Safety Council.

3. The current value is regulated by the resistance to ground of the body of the operator and by the conditions in which he is working; i.e., if his feet or hands are wet, skin resistance will be lowered and the flow of current through his body increased. Unless the equipment is grounded, thereby providing a path of less resistance, the operator's body becomes a part of the energized circuit.

4. This data sheet discusses the grounding of portable electrical equipment using between 50 and 240 volts.* These voltages are generally used in the operation of portable electrical equipment.

5. Common portable electrical equipment includes drills, abrasive tools, testing equipment, saws, heating appliances, and fans or blowers. When defects occur in an electrical circuit, shorted, broken, or exposed wires inside a tool or dirt laden with conducting material will make contact with the metal framework and cause the equipment to become energized. (See Figure 1.) The equipment may, however, still be in operating condition.

6. To reduce the electric shock hazard, it is important that a separate low resistance ground wire be provided, attached to the framework of the equipment and connected to a good ground to remove the flow of current if a defect develops. The fuse or circuit breaker will open the circuit and indicate trouble.

7. In some plants the shock hazard of portable lamps is eliminated by use of small portable transformers which step the lamp voltage down to 6 volts.

Figure 2. Ground wire enclosed in conduit and secured to a water pipe with a standard ground clamp.

* For information on grounding to remove static charges, see Safe Practices Pamphlet No. 52, "Static Electricity," National Safety Council.

Figure 3. Enclosed ground wire attached to a driven electrode with a standard ground clamp.

Types of Grounds

8. To ground portable electrical equipment effectively, either of two types of grounding systems may be used. One system utilizes water pipes, metal frameworks of buildings, or other metal structures like well casings that are in direct contact with the earth and provide a low resistance path. (See Figure 2.) The other system uses a group of driven electrodes, buried plates and strips, or similar arrangement in direct contact with the earth.

9. Water pipes, a common means of grounding, offer excellent conductance to the flow of current directly into the earth. Though types of soil vary in resistivity, the extensiveness of a water pipe system, the branches of which come into contact with wet soil, brings the resistance within limits not exceeding 3 ohms.

Figure 4. New type of plug with U-shaped grounding blade and two standard parallel polarized blades.

Figure 5. A simple flashlight circuit used to check continuity of grounding circuit.

10. Exceptions occur where pipe joints are connected with insulating materials, or are connected to mains constructed of nonconducting materials. If the ground conductor cannot be bonded to the pipe on the street side of a water meter, a jumper must be used around the water meter. The jumper will eliminate the resistance offered to the current by pipe fittings connecting the meter and will provide a continuous circuit in case the meter should be removed for repairs.

11. In d-c circuits it is extremely important that the negative side be grounded onto the water pipe, to help prevent deterioration of the pipe and of nearby metal structures through electrolysis.

12. Wherever practicable, gas piping should not be used for circuit grounding, but it may serve as the grounding electrode for fixtures located at a considerable distance from water piping. When used, it should be bonded to the water-piping system at the point of entrance of the water piping.*

13. Structural metal framework of buildings in *direct contact with the subsoil* and dispersed over extensive areas of ground may be used as a substitute for water pipes. Inside columns or reinforcing rods set in concrete should not be relied on for grounding. Because of variance in types of soil, in ground water levels, and in protective coatings on structural members, resistance should be measured and should not exceed 25 ohms for artificial (buried or driven) grounds.

14. Electrodes (ground rods) driven into the ground are widely used because this system has certain advantages over other types. (See Figure 3.) Cost of distribution is low, installation is simple, and the system is easy to test and maintain. In many cases, suitable soil conditions may be found at a

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* National Electrical Safety Code, Section #9, Paragraph 95-A.

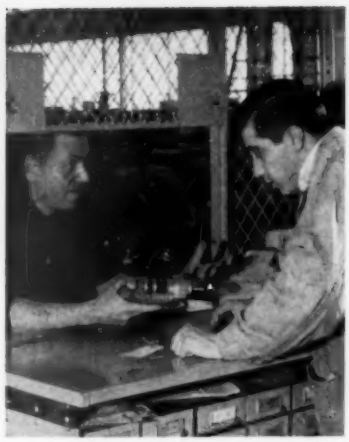


Figure 6. Defective equipment should be tagged and turned in to the tool room for repairs.

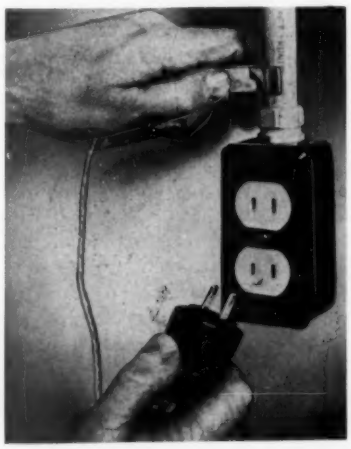


Figure 7. For safety, attach the ground clip to the conductor first, and then insert the power cord.

Counting the Savings

By G. ALBERT HILL

As frequency came down, the Connecticut Highway Department experienced a substantial drop in employee accident costs

IN any program, operational plan, or policy, there comes a time when the same question arises: Is it paying off?

An affirmative answer to this question provides the foundation for sound operations. Any other answer than a full affirmative must immediately be viewed as a warning that there is danger of investing time, money, and effort in a "white elephant."

Accident prevention lends itself to this kind of evaluation. As a business investment it is as tangible as any normal source of income. This is true whether an accident prevention program be applied to industry, construction or governmental operations.

The foregoing is based upon the experience of the Connecticut State Highway Department where only two years of effort in the field of accident prevention have furnished facts for the affirmative answers.

When the writer assumed his present post as highway commissioner ample effort was being expended toward making the highways of Connecticut safe for the traveling public but only limited attention was being given to the safety of the employees of the highway department. To remedy this deficiency a division of safety was set up inside the department on March 1, 1948, and Elwood T. Nettleton, then engineer of contracts, was designated as the head of the new division.

G. ALBERT HILL is Highway Commissioner, State of Connecticut, Hartford, Conn.

Maintaining good housekeeping conditions in the shops of the Connecticut Highway Department has been a factor in bringing down the accident rate. An inspection program was developed for garages, shops and work areas.

One of Mr. Nettleton's initial efforts was a survey of accident frequency in the state highway department. The frequency at that time was 77.1, certainly not an enviable record, and immediate effort toward accident reduction seemed called for. It was found that reports on accident cases were received and filed with little effort directed toward acquainting personnel of the department with the really serious accident total.

In the year prior to the establishment of the division of safety compensation costs amounted to $78,466.21. Using a standard yardstick (H. R. Heinrich 4 to 1 ratio) in computing the true total, the figure would seem to be more nearly in the vicinity of $300,000.

In an attempt to change all of this a carefully prepared program was developed to cover all field personnel. This was introduced in July, 1948, when safety committees were formed in each unit of the department. These committees consisted of appointed supervisory personnel and elected highway maintainers who represented the rank and file of the department.

The first direct step came with the organization of a series of two-hour meetings with each committee. These sessions were held on department time and all foremen in the unit concerned were called upon to attend. Accident cases were analyzed and corrective suggestions made, approved and placed in operation.

An inspection program was developed for garages, shops, storage areas and work operations. As a result of these inspections corrective steps were taken in repair garages where new ventilating systems were installed for the control of carbon monoxide. Sanitary fa-

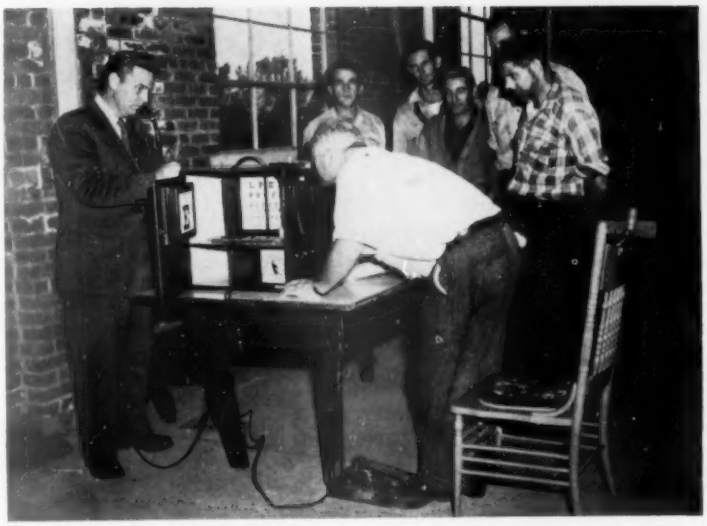
cilities were improved, inadequate lighting was brought up to good standards and fire protection methods and equipment ware improved and standardized.

While the value of these steps was obvious to the working personnel an even more personal element was developed when safety equipment and protective clothing were supplied to employees at the expense of the state. Needless to say use of these latter items was made mandatory.

An intensive program was developed for the prevention of poison ivy dermatitis and, in addition, outside authorities were brought in for committee and other meetings to present specific problems of grave concern to the units involved.

With the exceedingly valuable assistance of the American Red Cross, a standard first-aid training course was set up. First-aiders took refresher courses and then advanced courses for the development of a corps of training instructors. Eventually, this plan provided the department with an adequate group of instructors capable of seeing to it that every member of the department could have a basic first-aid training course. This training work is now in progress.

The most recent operation is a driver training program which is calculated to reduce motor vehicle accidents. Under this plan all department vehicle operators will be completely trained to the best accepted standards of motor vehicle operation.



Testing vision of operators of motor vehicles and other highway equipment.

General operations are covered by a new safe-practice handbook which has been compiled and will be distributed in the near future to every member of the Connecticut State Highway Department.

It may well be asked: "What has been the net result of all of this effort?"

It has been encouraging from every aspect. Employee morale has been increased by the knowledge that the impersonal entity called the department is actually an agency interested in the individual welfare of the members of it. The public relations of the department have been improved by the reduction of adverse criticism which normally comes whenever an accident occurs.

The most important result, however, is indicated by a substantial reduction in direct compensation costs. A saving of $26,826.51 has been effected. If one uses the same ratio established by Heinrich—referred to earlier in this story—the actual savings have exceeded $100,000 in one year. This would seem to speak for itself.

Of even greater importance—since human suffering is the important element—the accident frequency rate of the State Highway Department of Connecticut is down to 24.6. While this is still high when compared to average national figures it is definitely headed in the right direction — down. Every part of the safety program of the Connecticut State Highway Department is calculated to keep the frequency rate going in that direction.

This program is essentially simple as it relates to each employee engaged in his daily duties.

"Tell him, show him, have him do it, correct him till he has it, supervise him to see that he keeps it."

Training programs cover safety in many phases of the department's work. Motor vehicle operation and first aid are among the courses.

Sleuthing for Skin Irritants

By C. H. KALB, M.D.

Running down the offending substance in a dermatitis case may require some patient detective work—sometimes away from the job

INDUSTRIAL DERMATITIS, "The Great Intruder" makes up for any siren-wailing drama by a deceptive, progressive irritation frequently persisting until, through sheer inability to carry on, the workingman is pulled off the job for which he has been trained—transferred to "clean, dry work," at a loss to himself and management, or onto direct compensation, while shuttling impatiently between a doctor's office and the idleness at home.

A preventive health and safety program runs like a smooth, superhighway over the rugged, costly experiences of the past. If National Safety Council statistics arouse your concern over industrial efficiency, economy and morale, then a pattern of dermatitis control, integrating the efforts of technical personnel both industrial and medical, may serve by augmenting your own formula for the particular situation in which you have the greatest interest.

Characteristic of the overwhelming response to demands of an unparalleled decade of events has been the creation of the "super-shop," a mingling of highest achievements in chemical and power engineering. Out of this streamlining of industrial effort has grown an increasing demand for a wide range of agents—those super-irritants, if you will, which make it possible to maintain the pace we have set. Vital as these appear to be, it may be well to recall every now and again what Henry Ford II had to say apropos this situation: "Machines alone do not give us mass production. Mass production is achieved by both machines and men!"*

Two fairly simple, yet worthy, expedients allow one to visualize and analyze a company's dermatitis experiences, thereby fashioning the scope and magnitude of an effectively directed counterattack. I refer to the pinstudded floorplan of your plant which tells at a glance *where* your trouble zones are, and an up-to-the-minute card index of the exposure-possibilities in each stage of production; the *why* and *wherefore* of your dermatitis difficulties.

Occupational Exposure Summary

By applying the data thus derived, it is possible with very little trouble to prepare an occupational exposure summary, keystone of the arch joining those spheres of approach represented by your supervisory personnel and the doctors who see your dermatitis problems. Too many organizations make the mistake of thinking about an irritation of the skin in the same light as one might a smashed toe! While one smashed toe adds very little in the way of variety to the parade of smashed toes, a rebellion of the skin's defenses calls not only for skillful restoration to normalcy, but far more significantly, the rooting out of the causative agent in an effort to prevent its recurrence.

Much looseness in our thinking with respect to cause and effect in cases of dermatitis could be overcome if the doctor were furnished an outline of the employee's contacts at the plant, together with a brief paragraph or two of simple explanatory material relating to his job-routine.

Broader experiences than my own relate the wisdom of doing two things when, because of unavailability, competitive advantage, or varying requirements, a new potential skin irritant is purchased for use within the plant. First is the memo which enables your card-file to remain current; second, the setting up of a "pilot operation" in which only a few units and a few employees are involved, thus affording a week of study under circumstances in which any possible adverse reactions may easily be detected. A few days thus spent in evaluating a new agent may be repaid a hundredfold.

In one of our plants, engineering approval was given a contemplated varnish substitute. While the stockpile of the former product was being used up, one line was started on the new formula. On the fourth day of running, a foreman, constantly exposed, complained of severe irritation, redness and oozing of the skin of his hands and forearms. A convenient annual shutdown allowed his dermatitis, with mild medications, to completely return to normal.

DR. C. H. KALB is a consultant in Industrial Medicine, Milwaukee, Wisconsin. This article was presented originally before the Food Section, 38th National Safety Congress.

* Industrial Hygiene Newsletter, February 1950.

Even though the formula was instantly discarded in favor of its harmless predecessor, the foreman experienced a recurrence of the dermatitis when he slipped into a pair of mitts still retaining traces of the irritant which had soaked into the fabric!

Another factory decided to use a competitive solution for dipping gaskets. Determined to avoid the waste of possible technical errors, one of their more experienced women was assigned to the task of a trial run with the new material. The third day found her in the shop hospital complaining of a severe contact dermatitis which responded promptly to conservative measures once the obvious irritant-exposure was avoided.

In both instances, technical reasons were given for the pilot procedures, but they adequately commend the virtue of circumspection before releasing new products with unqualified approval.

The men who, day after day, guide and control the tools of production are themselves capable of disturbing the safety ratio because of certain basic human frailties developing under the particular pressures and circumstances of job-routine.

Speed Brings Eczema

Piece-work, for instance, while rewarding the skilled, efficient worker, may bring about individually unsafe practices because of the premium placed upon speed. Take the case of Jerry, a punch-press operator who did fairly well at his job by wiping away the grease on blanks with waste dipped into a pan of kerosene. Not many outside his car-pool knew about it, but one day Mrs. Punchpress Operator had a baby, and the bills came in faster than Jerry's savings could handle them. Before very long, Jerry was soaking handfuls of blanks in a pail of kerosene. For the next few days, Jerry's daily output soared—and then it stopped altogether.

"Where's Jerry?" asked one of the boys, "His wife sick again?" Another replied, "No, I guess all this nervousness and worry over expenses has been too much for Jerry—he's got eczema and had to go to the doctor himself." It looked that way down on the machine; it looked that way in the front office too, but actually, important as nervous tension can be, it was the hours of excessive contact with this solvent which actually furnished the key to the riddle of Jerry's dermatitis!

Wash Thoroughly

Tom and Dick had much in common. They lived on the same street, they worked side by side in a local machine shop, they both would rather play Schafskopf than eat, and they either got a ride home with Harry in the timekeeper's office, or they walked the last two miles. Now, anyone who has ever soiled a pair of overalls knows that a fellow can't walk up to a second floor washroom, scrub up, eat lunch and have enough time left to play Schafskopf with the boys unless you're cutting the corners pretty short. Sandwiches, pickles and a round of cards go well together, but the short-cut of rinsing off grease in a pail of cold water two minutes before the noon whistle, goes better with dermatitis, which it did!

And because this is a double feature, we might consider that Harry, with the white-collar job "Couldn't wait forever" and anyone riding with him had just better be out on the parking lot at five o'clock sharp! Again, no washup! From examples such as these, it is easy to see that there's more to it than the full page ad in the trade journal which shouts: "Buy superior industrial cleansers and enjoy the security of satisfied workingmen!"

A grumbling, discontented throng of men gathered in the shop hospital and one by one pointed to the irritation of their arms—contact dermatitis encountered on five-wheel grinders supplied from a central-feed tank of 5,000 gallons of sulphonated coolant. Laboratory studies quickly revealed an apparent breaking down of the coolant under operating conditions which were claimed to have been quite uniform. No deodorants had been

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Safer Lifts

By S. N. MORISON

Sling chains are being worked harder now. More care in selection, use and maintenance is needed

WITHIN the past few years there have been noteworthy improvements in the means by which materials of every sort are handled. This is true in every type of handling gear, from the cranes themselves, to the sling chains, hooks, and means of rigging loads.

To my mind, one of the most remarkable developments has been the adoption of alloy steels for sling chains and attachments. Not too many years ago a sling chain was considered a perishable piece of equipment, because of its erratic performance. The poor performance of sling chains 25 or more years ago was due principally to the materials of which these chains were constructed. Wrought iron and low-carbon steel were the usual materials.

Low-carbon steel has many fine characteristics and it is indicated for use in many products but it does not have resistance to grain growth or, more technically speaking, to a development known as Stead's Brittleness. This brittleness is caused by constant strain due to application and releasing of the loads which the chain is lifting, eventually resulting in an increase in the size of the molecules comprising the material from which the chain links are made. The end result is that the original elasticity of the chain is reduced to such an extent that a brittle failure is the almost inevitable end. Brittleness was accelerated by the existence of certain conditions such as the subjection of the chains to extreme cold, to overloading, and to shock loads.

Even without these factors, work-hardness eventually set in, often within four to six months of normal usage. Normalizing or annealing, if periodically applied, would relieve the strains to which these chains are subjected, but one of the most unfortunate results of even carefully controlled normalizing is that chains so treated lose a certain amount of their tensile strength and hence their capacity should be rated downward after each annealing. It was recommended by some safety organizations that the rated capacity of a normalized sling chain should be decreased by as much as ten per cent from the original safe working load after each such annealing.

The low-carbon steel sling chain, due to its relative softness, was also subject to gouging and nicking, which reduced its tensile strength at affected areas. Rapid wear at bearing points was another defect which this type of chain suffered even under normal use, with no overloading. Therefore, I believe that it is fair to state that sling chains made from a low-carbon steel could be used safely for overhead lifting only when subjected to extremely careful and continuous examination and when the loads were carefully selected and were well below the rated safe working loads of the chains, and, probably most important of all,

S. N. MORISON is Manager of Industrial Sales, S. G. Taylor Company, Hammond, Indiana. This article has been adapted from a paper presented before the Metals Section, 38th National Safety Congress.

when the chains were periodically and carefully normalized and re-rated after each such annealing.

Turning to wrought iron sling chains, I believe that first of all it should be stated that there is a great difference between one wrought iron and another. There is Swedish iron, which is very soft, extremely ductile, low tensile strength, material which is very resistant to corrosion and comparatively resistant to work-hardness. This type of iron is difficult to procure and also expensive, factors which have limited its use to some special installations.

Then there is the wrought iron which is known variously as "chain iron," "puddled iron," and more technically "triple re-rolled puddled pure much bar iron." This material is excellent for sling chains. It has very good ductility, a slightly higher tensile strength than Swedish iron, a very satisfactory resistance to work-hardness, and practically as high a resistance to corrosion as Swedish iron. It has a highly fibrous structure which becomes apparent in an etched cross section segment and appears as a piled structure.

The use of this type of material in the manufacture of sling chains was a very distinct advance over the low-carbon steels. Wrought iron sling chains, however, were very soft, had a lower tensile strength than low-carbon steel, and were subject to work fatigue with attendant embrittlement, although to a much less degree than chain made from low-carbon steel. Their considerable ductility was a great improvement since this enabled wrought iron sling chains to elongate under an overload and thus give visual proof of overloading. Maintained in a well normalized condition, this type of chain made an excellent lifting medium.

Other types of wrought iron less suitable than the grades mentioned have been used for the manufacture of sling chains. Some of these grades contain admixtures of steel scrap and other extraneous materials which create a tendency for the iron bars to split when formed into chain links and also later on when the chain is in use.

I am informed that the really first grade wrought iron is becoming very scarce since the process of "puddling" is fast disappearing because workers with this special skill are fast disappearing and there are few to take their places.

Wrought iron sling chains are still in very general use and are performing in a creditable manner. Efficient performance, however, depends upon their being maintained in first class condition, especially with regard to periodic annealing in controlled furnaces, under expert supervision.

The introduction of sling chains made from alloy steels is a development of the last 15 years. Many alloy steels have been tried by manufacturers, but to the best of my belief, all of these alloy steels have many of the same qualities and produce chain which has approximately the same tensile strength, ductility and freedom from work fatigue. With the introduction of alloy steel chain many of the disadvantages which had formerly been inherent in the use of sling chains as lifting mediums disappeared or became so minimized that they no longer constituted a serious problem.

In the first place, because of the tensile strength of approximately 125,000 psi of alloy steel when heat-treated, which is considerably more than twice the tensile strength of low-carbon steel or of wrought iron, which are about 55,000 lbs. and 48,000 lbs. respectively, it immediately became possible to lift very heavy loads with a relatively light chain instead of the large diameter wrought iron chains

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DSS Award to Fifth Army

Lt. Gen. Stephen J. Chamberlin, commanding Fifth Army, is congratulated by President Ned H. Dearborn, NSC, on the 1949 safety record, the best established by the six armies in the U. S. A. For this record, the Council's Distinguished Service to Safety Award was presented in a formal ceremony in front of Fifth Army Headquarters in Chicago, October 4. Other participants in the ceremony, from left: Lawrence L. Quintal, Fifth Army safety engineer; Col. William G. Purdy, Provost Marshal; Major Ralph H. Franklin, chief of Safety Division, Provost Marshal Section, and Brigadier General Harold E. Eastwood, Fifth Army chief of staff. At right rear are staff officers who took part in the ceremony.

(Fiction)

THE NEW LEADER

By BILL ANDREWS

October 19, 1950

Mark sprawled on the sofa, his eyes half shut, a look of profound weariness on his face—the characteristic look of a National Safety Council staff representative to an industrial section on Thursday evening of Congress week.

And Max, whose room at the Stevens we were using for our conference, had a look of bright-eyed, tranquil shrewdness. His little feet were soaking in a tub of hot water. "I am," he said, "the only badly designed piece of equipment in the whole line I'm peddling. I am five foot three, and I weigh 170. These feet were not built to support me through a week of standing up in a booth at an exhibit, telling safety men how my equipment will save them from hundreds of accidents. It is very sad, and I think we ought to order dinner."

John Done, my successor as general chairman of the section, was the only one of the four of us who still looked crisp and alert. The double-breasted suit had a sharp press, and his tie had a faultless knot that I never achieve.

Done was keyed up, a little solemn, but basically enthusiastic. He was talking about his plans for the section in the coming year, and the plans were as crisp and neat as his appearance.

He itemized his major proposals:

1. A drive to increase membership in the section by 20 per cent.

2. A triple-barrelled research program, covering ventilation, guarding and educational techniques.

3. An expanded publication schedule covering data sheets, safe practices pamphlets and posters.

4. A 1951 Congress attendance for the section at least 50 per cent greater than this year's.

Mark didn't open his eyes, as he said, "It's a good program, if you can make it work."

"Why shouldn't it work?" asked Done.

Mark sighed, so I took over.

"You have an executive committee," I said. "It has perhaps thirty men on it. I would guess that perhaps half a dozen accepted nomination with no intention of doing any work. Another half dozen, with good intentions, will run into personal or business situations that will keep them too busy to do much work for the section. The next half dozen will do a few jobs, if they are pushed hard. Then there's a group that will serve loyally, but won't take the initiative. That leave you only a handful of guys who can and will really carry the ball on major projects."

Done grunted. "There's Mark and you and I," he said.

Mark's eyes did open, then, and turned to me, pleadingly.

I tried to lay it on the line, combining what I learned in a year as general chairman with the experience that was passed on to me by my predecessors. "Look," I said, "You've got one function that will keep you plenty busy. That is to keep the committee working. You can't do that if you try to take the details of any individual major projects as your own responsibility. And Mark is, believe me, going to be useful to the section and the industry in just about exactly an inverse ratio to the amount of detail work you unload on him."

John looked a little puzzled. "I don't quite follow you on that."

I spelled it out as well as I could. "Mark, first of all, carries the job of representing the section and the industry in the daily grind of National Safety Council headquarters work. In staff meetings which determine how that day-to-day work is to be done, where its emphasis will lie, he is our full-time voice. He is our representative whenever Council publications not originating in our section are being prepared."

"But we're not concerned with

other sections' publications," Done objected.

Max broke in, "Mr. Done, I am just a peddler and not a committeeman. But you would be in, what you call it, the soup if you try to run your safety job on your section's own data sheets and pamphlets and nice, shiny, new research reports. I am right, no?"

I followed up, "Max is right, John. The Council's general publications, the Manual, the magazines, the general posters, and its public information work are the largest part of the job. And without Mark, these will be developed without the benefit of direct, detailed guidance from a guy who knows our viewpoint."

John grumbled, "O.K. But it still seems to me to be Mark's job to follow up on the committee people and serve as a clearing house for our committee operations."

Mark got up, walked to the window. Then he turned around, and, with a rueful grin, said, "John, you're right, and you're wrong. Yes, it's my job, in the sense that if the committee flops on its job, I'll have to do its work as far as I can. Sure, if your secretary doesn't get out notices, I will. Sure, if your program chairman fails to get speakers, I'll get up some kind of a program for the next Congress. Sure, if your newsletter editor doesn't get out a newsletter, I'll work with Eileen Perry and we'll get out something.

"There have been years when just that happened. And they were darned bad years for the section!"

I picked up the argument again, saying, "You can't expect one overworked guy to do the job a good committee can, if it is working on a reasonable program. Look, John, I like Mark, and I respect him. One of our bad committee choices last year was the newsletter editor. Mark had to do the whole job, and Mark knows as well as I do that the newsletter has been poor. It's been poor, not because Mark is dumb, but because,

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The SAFETY VALVE

A lot of things have failed to turn out as I expected they would, a fact for which I am truly grateful.—WILLIAM FEATHER.

(Me too—C. F.)

* * *

"Exploded Cities"

THAT has nothing to do with the A bomb; it's merely the term used by scientists in describing the growth of satellite communities around big cities and the relatively small growth of the city at the metropolitan core.

New York Times of June 18 carried an article with the startling title, "The Suburbs Are Strangling the City." It says that New York has "exploded all over the landscape," and is facing serious problems as a result.

The complaint of the big city is that it must provide costly facilities used by twice its own population but it can tax only persons and properties within its limits.

Because of the exodus of population to the suburbs, some sections suffer blight and loss of tax values. Other sections are overdeveloped to take care of the daytime non-resident worker.

Manhattan, it is pointed out, has a resident population of two million but every day it is host to 3,500,000 others whose comings and goings create transit congestion and traffic paralysis. They also add immensely to the problems of food and water supply, waste disposal, police protection, and other basic community needs.

That's the big city's plight, and it's a very real one. But if the 3½ million people who swarm into Manhattan each day (plus their families) were to be housed within the city limits (even with Brooklyn included) the result would be far from pleasant.

On the other hand, if the commuters found they could earn a living in Larchmont or Nutley, and the tourists decided to stay home or visit Seattle or Dallas instead, there would be a lot of unhappy folks in the big town.

But this population shift isn't all velvet for the bedroom towns. Of course, it puts new property on the suburban tax rolls but these communities are being called upon to provide water, lighting, paving, schools, police and fire protection, and other services. In many areas the water supply is a matter of grave concern.

In the New York area the problems are most acute but other cities are feeling them too.

And there are some more subtle changes brought about by the shifting population. The open spaces that attracted people become filled up with dreary subdivisions of standardized houses. The suburban trains fill up and you get a strap instead of a seat. Traffic and parking in the outlying shopping areas are also becoming troublesome. And the assessor looks at your property with a greedy eye.

Looking at it from any angle, the situation is difficult. But reversing the trend might make it even worse.

* * *

Many shall run to and fro and knowledge shall be increased.—DANIEL 12:4.

That verse appeared on the masthead of the *Baptist Telescope* for January 25, 1860, published at Hendersonville, N. C. Sounds like a National Safety Congress, doesn't it?

Carman Fish

38th Congress Opens

(From page 19)

Saturday. In fact, the printed program did not begin to cover the meetings and activities of the week. On Monday the Federal Safety Conference for safety men in the various branches of the federal government held an all day session. In the afternoon numerous meetings of sectional executive committees were held in addition to many of the regular sectional meetings.

Child Safety Committee

Following a joint meeting of the Council with the American Academy of Pediatrics on Tuesday evening, a new committee was formed to reduce the number of accidents among the nation's children. Dr. George M. Wheatley, of New York, will head the committee.

At the meeting, Dr. Edward B. Shaw, president of the Academy, said that accidents are responsible for more than one-third of all deaths among children of preschool age and that physicians have "an inescapable responsibility" to help safety agencies in curbing these tragic losses.

Dr. Harry F. Dietrich, practicing pediatrician of the Department of Pediatrics, University of Southern California Medical School, stressed the importance of the parent in preventing childhood accidents. The pediatrician can immunize children from infectious disease, but only the "parents can immunize their children against accidental tragedy."

The importance of beginning safety instruction in the home and continuing it throughout the school years with the help of safety experts, medical men, educators and just plain citizens was the theme of Herold Hunt, general superintendent of schools, Chicago.

Many companies with large representations took advantage of Congress to hold company safety conferences.

Radio and television brought the message of the Congress to vast audiences throughout the month of October. On television five local and six network programs were scheduled. On radio 23 special broadcasts on networks and 17 local programs were contributed by the networks and individual stations and by advertisers sponsoring programs. In addition, safety messages were incorporated in 150 news broadcasts.

The December NATIONAL SAFETY NEWS will carry additional Congress features, including lists of sectional chairmen, and reports of events later in the week after the November issue had gone to press.

Additional photographs by the Council's ubiquitous camera men will also appear in the December issue.

The camera man looks in on the Safety Exposition.

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For Homes
Dr. D. B. Armstrong, second vice-president, Metropolitan Life Insurance Co., New York.

For Industry
J. E. Trainer, vice-president and production manager, The Firestone Tire and Rubber Co., Akron, Ohio.

For Local Safety Organizations
Kenneth B. Colman, Seattle, Wash.

For Membership
E. W. Kempton, assistant vice-president, United States Steel Corp. of Delaware, Pittsburgh, Pa.

For Public Information
Boyd Lewis, executive editor, *NEA-Acme*, New York.

For Schools and Colleges
Dr. John W. Studebaker, vice-president and chairman of the Editorial Board, Scholastic Magazines, New York.

For Traffic and Transportation
Thomas H. MacDonald, commissioner of public roads, Bureau of Public Roads, Department of Commerce, Washington, D. C.

For Women's Activities
Mrs. George W. Jaqua, safety chairman, General Federation of Women's Clubs, Winchester, Ind.

SECRETARY:
R. L. Forney, general secretary, National Safety Council, Chicago.

ASSISTANT TREASURERS:
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H. H. Greenwald, director, Accounting Division, National Safety Council, Chicago.

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The lighter side was conspicuous in the Public Information display.

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Miss Eleanor Howe, editor-in-chief, What's New in Home Economics, Chicago.

Dr. Herold C. Hunt, general superintendent of schools, Chicago.

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Mrs. George W. Jaqua, safety chairman, General Federation of Women's Clubs, Winchester, Ind.

E. W. Kempton, assistant vice president, United States Steel Corp. of Delaware, Pittsburgh, Pa.

Walter G. King, safety director, American Optical Co., New York.

Harold K. Kramer, assistant vice-president, The Borden Co., New York.

Franklin M. Kreml, director, Traffic Division, International Association of Chiefs of Police, Evanston, Ill.

Walter D. Ladd, manager, St. Joseph Safety Council, St. Joseph, Mo.

Walter G. Legge, president, Walter G. Legge Co., Inc., New York.

Boyd Lewis, executive editor, NEA-Acme, New York.

George H. Lowe, Lowe and Huggins, Ogden, Utah.

A. E. Lyon, executive secretary, Railway Labor Executives Assn., Washington, D.C.

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Miss Marion E. Martin, Commissioner of Labor and Industry, State of Maine, Augusta, Me.

I. W. Millard, president, Industrial Gloves Co., Danville, Ill.

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Wind whistling through a valley formed by buildings on both sides of an 1800-foot ore bridge runway at Crucible Steel's Midland plant occasionally gave the two big cable-operated bridges a free ride. To prevent this, Dravo Corp. installed rail clamps on legs of bridges.

Anchored Against Wind

ORE bridges and similar material-handling equipment traveling on rails sometimes get free rides from the wind.

To eliminate such a hazard, Crucible Steel Company of America recently had Dravo Corporation, Pittsburgh, design and install powerful rail clamps on the carriages of two big ore bridges operating along an 1800-foot runway at its Midland, Pa., mill. The clamps were installed while Dravo's Crane and Bridge Department overhauled the two structures.

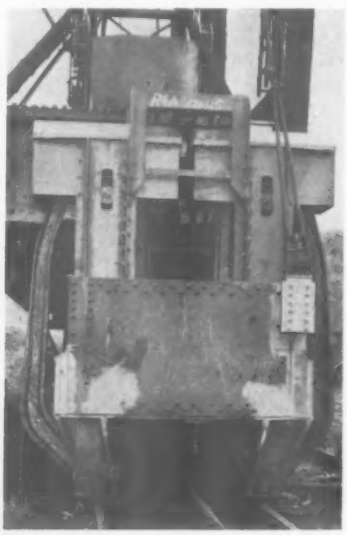
With tremendous pressure supplied by powerful helical springs pushing a toggle system and lever arms, the clamps grip each side of the rail in a pincer action by toothed, hardened steel contact blocks having a high friction factor. The "squeeze" on each rail is more than 192 tons, giving the bridge a total gripping force of 768 tons. The springs that hold the clamps against the rails are coiled of 1¾-inch steel wire.

To release the clamps, the coiled springs are compressed and the toggle is pulled closed through a wire rope sheave arrangement operated by a power-driven winch mounted on the carriage of each bridge leg. A 7½-horsepower electric motor drives the winch drum through worm reducer and spur gear. Both rail clamps for each leg are released by the same drum and motor. All the weight of the clamping mechanism is carried on the supporting structure.

The clamps are designed to hold the bridge steady against a wind force of 45 pounds per square foot, equivalent to a velocity of 106 miles per hour.

On the cable-operated ore bridges, the rail clamps are held open until the wind velocity approaches a predetermined limit. Then an anemometer generator automatically releases the holding motor controls and the spring-loaded clamps grip the rails.

Machinery to release rail clamps is housed on truck assembly of each ore-bridge leg. Clamps grip head of each rail with a force of more than 192 tons. Outer lever arm of one clamping assembly is shown in this view during installation.



Positive clamping of each ore-bridge leg to the double rail on which it rides is done by powerful springs transmitting force through toggles and levers. Rail clamps operate automatically by anemometer control.

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The du Pont Safety Story

(From page 23)

It was realized that to obtain the best results the operating organizations must be brought more intimately into the safety work. Accordingly, plant safety committees were established at all of the plants; and, at the larger plants, safety departments with safety engineers in charge were organized. Workmen were then given an actual part in the program. The importance of preventing fires and explosions had not been overlooked and prior to this, fire prevention and protection had been assigned to the Light, Heat and Powder Division of the Engineering Department, work which included plant layouts and type of construction, specifications for fire-fighting facilities and to some extent plant inspections.

The development of the du Pont Company's formal safety program started late in 1914. At that time the rapid expansion and speeding up of industry and the employment of many thousands of inexperienced workers necessitated better organization and more comprehensive safety programs.

The early safety commissions were replaced with a special staff in the Engineering Department known as the Safety Division which functioned as a central clearing house for safety and also served in an advisory capacity to all plants.

The period 1915-1919, during which Mr. Pierre S. du Pont was president, really marked the beginning of our present-day safety activities. Safety programs were formulated and a system was definitely established whereby data on personal injuries reported to the Wilmington Office were tabulated and analyzed to determine causes. Operating safety rules were adopted, printed and posted in the plants. Safety standards were developed and a plan for safety organization and activities was outlined.

Following the war period, 1919-1926, the Engineering Department's Safety Division became a Section of the Service Department which included under one head many general functions such as Medical, Safety, Fire Protection, Personnel, Compensation, Industrial Relations, Salvage & Reclamation, etc.

In 1926 the Safety Section and the Fire Protection Section were combined becoming the Safety & Fire Protection Division. This marked the beginning of the present stage of the company's effective program to prevent injuries.

The Safety and Fire Protection Division develops safety and fire protection standards; acts in an advisory capacity to the engineering and operating departments; advises on plant layouts, location of new buildings, building construction, alteration, protection of fire, explosion and personal injury hazards, etc. It evaluates safety and fire protection equipment and selects that which appears most suitable; investigates fires and explosions involving large losses or loss of life, unusual hazards or frequent recurrence of fires or personal injuries from the same or similar causes; arranges for and in some instances conducts or supervises tests to determine hazards which may be introduced through the use of Company products or materials, and advises the users how to prevent fires, explosions or injury to workers. It approves major and minor construction projects and also purchase requisitions when the latter affect

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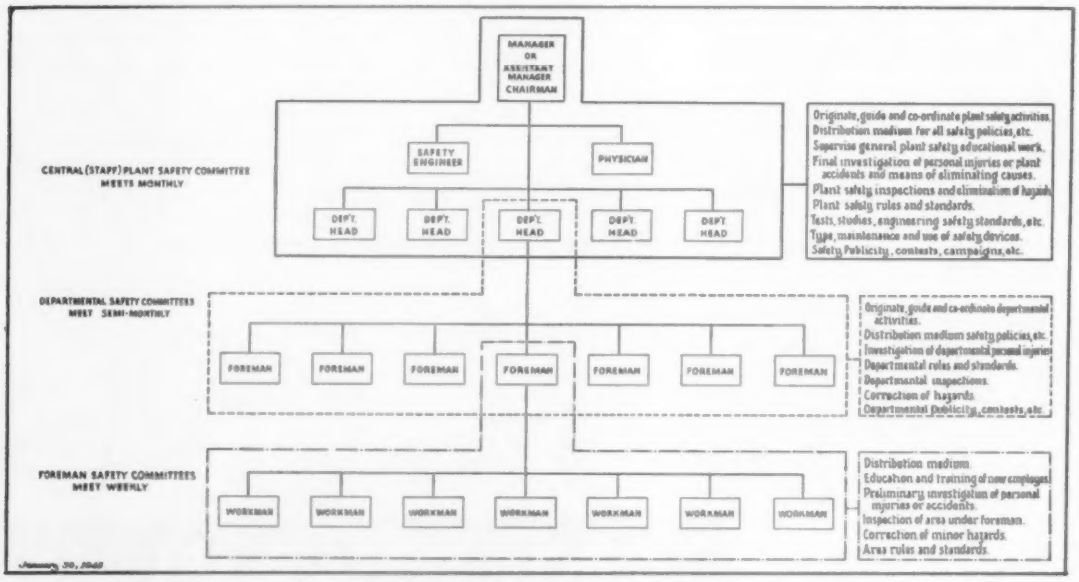

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THE ACCIDENT BAROMETER

Prepared by Statistical Division, National Safety Council

Accidental deaths in July numbered approximately 8,500, or 400 less than occurred in July, 1949. Large decreases in deaths from home and public non-motor-vehicle accidents were partially offset by a moderate increase in occupational and a sizable increase in motor-vehicle deaths.

During the first seven months of 1950, accidental deaths totalled about 51,200, compared to 53,000 for the same months of 1949. Both home and public non-motor-vehicle accident fatalities were fewer than last year. A small increase was recorded in deaths from occupational accidents and a large increase in motor-vehicle fatalities.

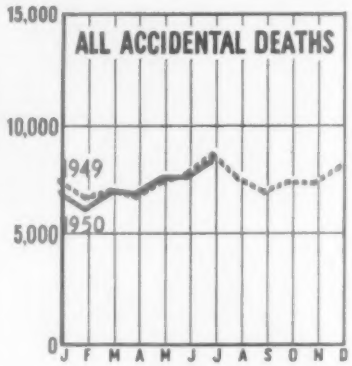
Motor-Vehicle Deaths

The upward trend which started in January continued through July. The death total was approximately 3,150, or 13 per cent more than occurred in July last year.

The seven-month death total was about 18,320, an increase of 12 per cent over 16,400 in 1949. Compared to 1948, it was an increase of 9 per cent.

The seven-month death rate per 100,000,000 vehicle miles was 6.9, the same as in 1949.

Of the 46 states reporting for seven months, 14 had fewer deaths and 32 had more deaths. A total of 472 cities with populations over 10,000 reported an increase of 17 per cent for July and 6 per cent for the seven months.



	1950	1949	Change
July	8,500	8,900	—4%
Seven Months	51,200	53,000	—3%

Regional changes from 1949 in the seven-month death totals were:

North Atlantic	+ 5%
South Atlantic	+21%
North Central	+ 7%
South Central	+19%
Mountain	+26%
Pacific	+ 5%

Occupational Accidents

Deaths from occupational accidents numbered approximately 1,400 in July, an increase of 100 over July last year. The total for the seven months was 9,000, or 3 per cent more than occurred in the same months of 1949.

The July frequency rate for plants in community council interplant contests was 8.22, a 1 per cent decrease from last year. The July rate for plants in the National Safety Council's sectional contests was 6.64, a reduction of 8 per cent from 1949. The seven-month rate in the community council interplant contests was 7.57—down 4 per cent; while in sectional contests it was 6.69, a decrease of only 1 per cent.

Public Deaths

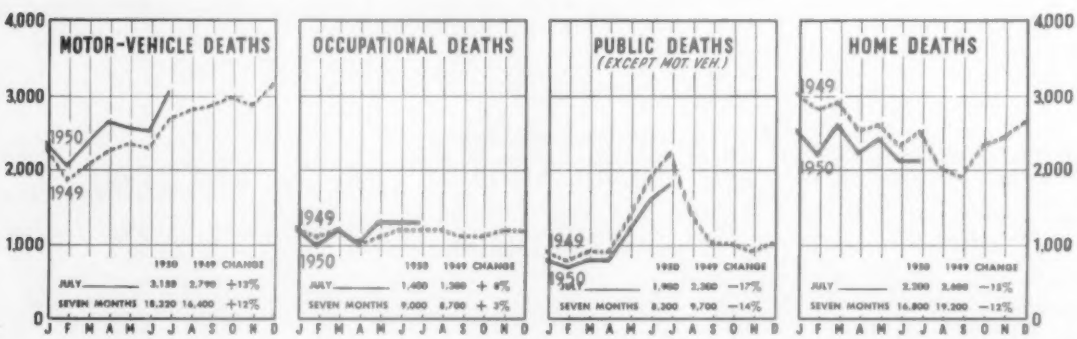
Public non-motor-vehicle accidents in July resulted in approximately 1,900 deaths, a decrease of 17 per cent from 1949.

The seven-month death total was 8,300, or 14 per cent fewer than occurred in the same months last year. There were sizable decreases in deaths from transportation accidents, drownings, and falls; and a moderate reduction in fatalities from firearms accidents. A large increase occurred in fatal burns. Decreases were reported in all age groups with the greatest improvement recorded for persons 15 to 24 years old, and persons 25 to 44 years old.

Home Deaths

The home accident death total for July was about 2,200, or 400 less than last year.

The total for the seven months was 16,800, a decrease of 12 per cent from 1949. Large reductions occurred in mechanical suffocation deaths, fatal falls and unclassified home accidents. Deaths from firearms accidents decreased moderately, while fatal burns and poisonings showed little change from 1949. Most of the reduction occurred among persons 65 years and over, but deaths of persons under 25 years old and persons 45 to 64 years old also decreased.



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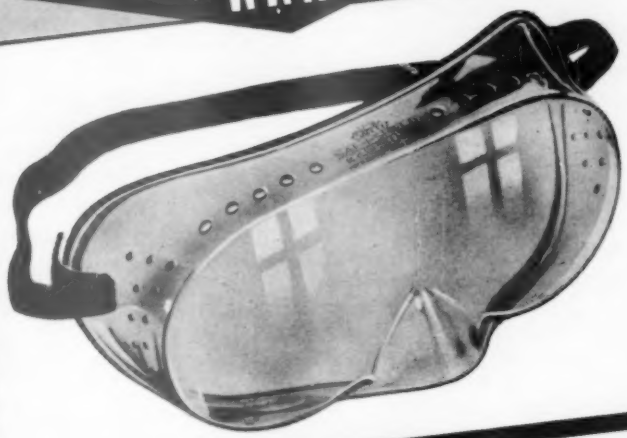

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The Safety Library

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Diemaking

Simplified Punch and Diemaking. By James Walker and Carl C. Taylor. Published by The MacMillan Company, New York, 1950; 235 p.; Price $5.

This review concerns itself only with the portion having to do with general safety precautions and safety suggestions for the die setter and operator. The book, by its title, covers the highly technical and broad field of design and construction of punch press dies.

The portion on safety is somewhat brief and much of it is good straightforward material. However, from the safety engineer's point of view, there is one serious omission and two errors. While making this objection we point out that the objection itself does not detract from the value of this book as a technical guide for making dies.

The omission has to do with designing safety into the die. Nothing is said concerning giving consideration, in the initial stages of planning a die, to allow for feeding stock to the die, injecting the stock and indexing the stock without the necessity for the operator to place his hands in the point of operation between the dies. While the authors make no attempt to appear as authorities for safety in power press operations, it is our opinion that so long as they mention safety at all it should have been covered more adequately.

It is quite obvious to all safety engineers having jurisdiction over power press dies that it is quite possible and much more effective, to design dies which include the points above. Most successful safety programs in power press operation include these considerations for safety in the manufacturing standards for the tool and die departments.

One of the errors concerns a statement that the greatest number of injuries occurs on power presses during set-up operations. This is incorrect. It is true that too many accidents occur during set-up operations, but a study being carried on continuously by the Statistics Committee of the Power Press and Forging Section of the National Safety Council indicates that the percentage of accidents which occur during set-up operations is less than 20 per cent.

Another statement is simply misleading. The statement is made " All punch presses should be equipped with safety devices—such as shown in figure — to protect the hands." The illustration shown is a two hand pull-away type guard. It takes a second reading of this statement quoted to make certain the authors are not recommending that each power press should be equipped with a pull-back type of guard. This is obviously incorrect. While the pull-away guard is excellent for many operations, it has certain limitations which do not make it a universal safeguard.

The comments concerning this book are meant to be critical only so far as they pertain to accident prevention in power press operations. The authors are certainly to be commended for including a section on safety in a technical book of this kind.

A. S. Kelly

A Child's Safety Book

Let's Look Ahead, by Elizabeth Sherman, Childrens Press, 320 S. Racine Avenue, Chicago, 1950. 28 pages, $1.00. (Buckram $2.00.)

This is a child's safety book with short, bright text and attractive illustrations. Full page reproductions in full color of paintings used in the National Safety Council's calendar occupy half the space of the book, and the text is accompanied by effective black and white sketches by Lois Fisher.

Topics covered include water safety, care in traffic, school safety, housekeeping, fire and related subjects.

This book is a good bet for a child's Christmas present or for use in a classroom library at the lower elementary level.

Bill Andrews

BOOKS AND PAMPHLETS

Aeronautics Industry

Static Electricity in Aircraft Operations and Maintenance. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., 1950. 11 p. Price 50c. (NFPA No. 404)

Dust Explosions

Recent Studies on the Explosibility of Cornstarch. Published by the Bureau of Mines, 1950. 8 p. Available from the Bureau, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Penn. Free. (Report of Investigations 4725)

Flammable Liquids

Properties of Flammable Liquids, Gases and Solids. Published by Factory Mutual Engineering Division, 184 High Street, Boston 10, Mass., 1950. 12 p. Revised edition. Free to members. (Loss Prevention Bulletin No. 36.10)

Health

Industrial Health Legislation. A Compilation of State Laws and Regulations. By Victoria M. Trasko. Published by U. S. Public Health Service, Washington 25, D. C., 1950. 156 p. Free.

Review of Literature on Health Hazards of Beryllium and Its Compounds. Published by U. S. Bureau of Mines, 1950. 23 p. Available from the Bureau, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Penn. Free. (Information Circular 7574)

Lightning

Code (ASA-5) for Protection

—To page 55

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Industrial Health

Abstracts of current literature on Industrial Hygiene, Medicine, and Nursing

By F. A. VAN ATTA, Industrial Department, NSC

Visual Tests

Lab Tests for Strenuous Visual Work Disclose Significant Results by Art Simonson, M.D. Industrial Hygiene News Letter of the Federal Security Agency, Vol. 10, No. 5, May, 1950, page 4.

This experimental work was carried on to check the values for minimal levels of illumination recommended by the Illuminating Engineering Society's "American Recommended Practice of Industrial Lighting." The work was done in the laboratory using a test which simulated the inspection of objects moving along a belt. The test was the recognition of small letters mounted on a belt which passed at irregular intervals and at irregular levels through a narrow slot in front of the subject. The subject had to write down the letters as they went by without looking down at his hands.

This work test produced severe visual fatigue in two hours and two hours of it was probably the equivalent in visual effort to a day's work of any ordinary occupational task.

The illumination was varied in six steps between two and 300 foot candles and scores were taken of the number of letters correctly identified as they went by on the belt. A running score was kept and the first five minutes of the task were compared to the last five minutes. A number of other visual functions were checked promptly before and after the test. Among the 23 individual items which were checked the most reliable and most sensitive indicator of the effect of the illumination was the accuracy with which the job itself was performed.

The performance on the job was not very good at the inadequate level of two foot candles illumination and improved rapidly up to about 50 foot candles. There was an optimum level of performance at about 100 foot candles, and it dropped off again at 300.

The drop in performance between the first five minutes and the last five minutes of the two-hour period also showed the occurrence of an optimum level at about 100 foot candles.

As a part of this work an attempt was also made to determine the effect of color on the performance of this task. The three types of illuminants tested were an inside frosted incandescent lamp, an opal glass lamp and a greenish colored lamp. The drop in the fusion frequency of flicker over the work period was taken as the measure of visual fatigue for this test. The opal glass lamp and the inside frosted lamp showed relatively little difference and probably no significant difference in the drop in fusion frequency of flicker. The greenish lamp, on the other hand, produced significantly less drop in fusion frequency of flicker than did either of the others.

Diabetes

The Diabetic in Industry by Allen F. Fowler, M.D. The Industrial Health Bulletin of the Canadian Department of National Health and Welfare, Volume 5, No. 12, September, 1950.

The employment of the diabetic is a very important problem to the individuals concerned and to the community since diabetes is not a very uncommon disease. It has been estimated that there are 1,000,000 known diabetics in the United States and that probably another 1,000,000 have the disease and have not been diagnosed.

The ability of the diabetic to obtain employment has always been rather poor, primarily because of the relatively low life expectancy of the diabetic and also because of the expected high absence rates. With the improved methods of handling the disease which have been developed within the last 20 years this situation has changed markedly and the diabetic is easily employable.

The records of one company on a considerable number of known diabetics showed that the average lost time for the diabetics was not greater than that of the non-diabetics in their employ. The life expectancy of the well-controlled diabetic has increased to the point where he can be expected to live through the normal period of employment and to reach an age at which he will qualify for most pension schemes.

The question of suitable employment must be considered. There are variations in the severity of the disease; some cases can be controlled by diet alone while others require diet plus insulin treatment. The diabetic who takes insulin may develop an insulin reaction because of exceptionally heavy work or because of failure to have meals on time. In such case he may have impaired judgment even when he does not realize he is having a reaction.

Individuals in this condition should obviously not be employed at occupations where their conduct might be a hazard to themselves or to their fellow employees. In particular, they should not work on high places or drive mobile equipment. This leaves a great many jobs in which they can be safely and usefully employed however and they should be so employed.

An even more serious problem is the individual who develops diabetes while on the job. He should be watched and controlled and kept on the job if possible. If it is one of the jobs which is dan-

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gerous to himself or to his fellow employees he should certainly be transferred to a job which he can carry on safely in spite of the frequent problem of availability of a place which is of the same rating and the problems of seniority rights and ability to take on a different type of work.

The guiding principle in any employment of diabetics should not be the severity of the disease process but the care and persistence with which the treatment is followed. The diabetic who has the ability and persistence to faithfully follow his diet and treatment has a good many of the characteristics which make for a good employee.

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Records of operation exceeding 500,000 man-hours, or one year, if exposure exceeds 250,000 man-hours, without a disabling (lost-time) injury are invited.

Joseph E. Seagram & Sons, Inc.
Blair Distilling Co., St. Francis, Ky.—December 1943 to August 1950; 550,286 man-hours.

American Cyanamid Co.
Calco Chemical Div., Piney River, Va.—May 11, 1948 to August 31, 1950; 1,883,262 man-hours.

The California Co.
Barataria Field, Gulf Coast Div., Production Dept.—July 1, 1948 to September 1, 1950; 352,176 man-hours.

Celanese Corp. of America
Celanese Lanese Corp., Burlington, N. C.—September 20, 1949 to September 19, 1950; 541,929 man-hours, continuing.

Combustion Engineering-Superheater, Inc.
Power Boiler Plant No. 1, Chattanooga, Div.—630,890 man-hours, continuing.

Ethyl Corp.
Baton Rouge Plant—July 19, 1950 to September 14, 1950; 1,147,819 man-hours, continuing.

Republic Steel Corp.
Electric Weld Tube Mills, Youngstown Dist.—September 19, 1949 to September 19, 1950; 1,414,762 man-hours, continuing.

Stanolind Oil and Gas Co.
Wewoka Area Producing Operations—September 16, 1938 to February 22, 1947; 1,510,125 man-hours.

United States Steel Supply Co.
Pittsburgh Plant—April 1949 to August 1950; 463,813 man-hours.

38th Congress Opens

(From page 39)

Harry Read, executive assistant to the secretary-treasurer, Congress of Industrial Organizations, Washington, D.C.

W. A. Roberts, executive vice-president, Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Tyler S. Rogers, assistant to the executive vice-president, Owens-Corning Fiberglas Corp., Toledo, Ohio.

A. V. Rohweder, superintendent of safety & welfare, Duluth, Missabe and Iron Range Railway Co., Duluth, Minn.

Robert T. Ross, manager, employee services, Industrial Relations, Ford Motor Co., Dearborn, Mich.

Dr. K. Frances Scott, associate professor of hygiene, Smith College, Northampton, Mass.

Charles B. Shuman, president, Illinois Agricultural Assn., Chicago.

Judge Lee E. Skeel, Court of Appeals of Ohio, Eighth Appellate District, Cleveland, Ohio.

R. T. Solensten, vice-president, Elliott Service Co., Mount Vernon, N. Y.

Leslie J. Sorenson, city traffic engineer, City of Chicago, Chicago.

W. A. Stewart, president American Optical Co., Southbridge, Mass.

Dr. John W. Studebaker, vice-president and chairman of the editorial board, Scholastic Magazines, New York.

James Tanham, New York.

J. E. Trainer, vice president and production manager, Firestone Tire and Rubber Co., Akron, Ohio.

Miss Judith C. Waller, director of public affairs and education, National Broadcasting Co., Central Division, Chicago.

Dwight W. Winkelman, president, D. W. Winkelman Co., Inc., Syracuse, N. Y.

Dr. William P. Yant, director of research and development, Mine Safety Appliances Co., John T. Ryan Memorial Laboratory, Pittsburgh, Pa.

Harold C. Zulauf, vice president, Alexander Smith & Sons Carpet Co., Yonkers, N. Y.

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Cason J. Callaway, Hamilton, Ga.

John W. Carpenter, president, Texas Power & Light Co., Dallas, Tex.

William G. Chandler, president, Scripps-Howard Supply Co., New York.

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tive Committee, American Standards Assn., New York.

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Philip Murray, president, Congress of Industrial Organizations, Washington, D.C.

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John Stilwell, vice-president, Consolidated Edison Co. of New York, Inc., New York.

C. E. Wilson, president, General Motors Corp., Detroit, Mich.

Charles Deere Wiman, president, Deere & Co., Moline, Ill.

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Ned H. Dearborn, president, National Safety Council, Chicago.

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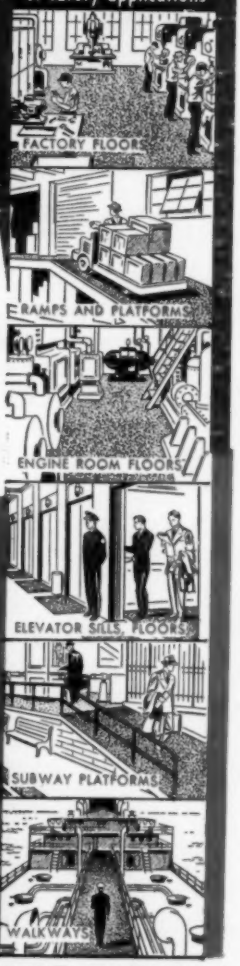

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Science Laboratory on Wheels

Instruments for identifying and measuring radioactivity are mounted on tables inside this traveling laboratory. The center table contains the Geiger counter for uranium prospecting and a nucleometer for identifying radioisotopes. On the table at the right are a health monitor, lead safety shields, a safety chamber for isotope work, sample spinner, and absorbers for distinguishing one isotope from another. A basic scaler that tests for radioactive iodine is on the table at left. In the picture is Ernest H. Wakefield who designed the laboratory.

IN this atomic age any war-time explosion must be tested at once for radioactivity. Testing instruments must be rushed into the area as quickly as possible.

With a mobile laboratory, technicians could speed to the scene of the blast. They could determine immediately if radioactivity were present, identify the type of radiation, and measure the danger. Moving quickly around the fringe of the blast, they could tell how far the radioactivity extended.

Built to do a peace-time job, the lab shown here could play an important job in atomic defense in modern war according to military and civilian experts who have inspected it. It was designed at Radiation Counter Laboratories, Inc., Chicago, so that instruments manufactured and sold by the company could be demonstrated to scientists who need such apparatus.

The mobile unit is completely equipped with all the instruments needed to prospect for uranium and to identify and measure radioactivity. Not all of these are needed in a war emergency.

The instruments were installed in the 12½ foot body of a Dodge delivery truck. This type of truck has low steps which enables visitors to step in and out with ease. It also has sufficient headroom to permit a man 6 feet 4 inches tall to work and operate instruments inside the truck without stooping.

Fluid drive on the truck protects the fragile instruments by providing smoother starts and stops and less gear shifting.

Large instruments are carried on metal tables in the truck body. Smaller tools and equipment are mounted on the walls. A long extension cord connects the electrical system in the truck to an outside source through any available 110-volt outlet. More than 40 outlets were installed on the inside walls of the truck to furnish power to the complete line of instruments.

The lab is lighted by rows of fluorescent tubing along each side of the roof.

Instruments carried on the tables include a nucleometer for identifying radioisotopes, Geiger counter for uranium prospecting, basic scaler for determining the amount of radioactive iodine in a person's goitre, a health monitor, rate meter and counter for measuring blood flow, safety chamber for isotope work, sample spinner, absorbers for distinguishing one isotope from another, and lead brick safety shields.

Safety carriers, tongs for handling radioisotopes, an atomic furnace control instrument, and a cosmic ray counter are mounted on the walls.

The laboratory was designed by Ernest H. Wakefield, director of the Chicago laboratory company, and actual construction was supervised by Frank S. Replogle, Jr., and Dr. E. E. Motta.

New Film on Driver Training

"Caution at the Crossroads," first of a series of short films designed to provide training for drivers of commercial vehicles, has been released by the National Association of Automotive Mutual Insurance Companies. Prints in either 16 mm. sound slide motion film or in 35 mm. sound slide film may be secured through the association's Accident and Fire Prevention Division, 919 North Michigan Avenue, Chicago, or through the insurance carriers making up the association's membership.

Each film of the series will be devoted to a specific accident-producing condition or situation.

"Caution at the Crossroads" carries its audience from one intersection situation to another, using the training device of conversation between a seasoned driver-trainer and the student he is instructing, and employing accepted safe driving practices. It has a runnng time of 11 minutes.

New Order on Hazardous Jobs

Secretary of Labor Maurice J. Tobin has adopted a new hazardous occupations order establishing a minimum age of 18 for employment of miners under the Fair Labor Standards Act—the Federal Wage-Hour Law—in occupations involved in the operation of power-driven metal forming, punching, and shearing machines. The order, No. 8, issued by the Secretary under the Wage-Hour Law, became effective October 30.

At the same time, Secretary Tobin announced his amendment of Hazardous Occupations Order No. 7. This order, in effect since 1946, sets a minimum age of 18

for employment in occupations involved in the operation of power-driven hoisting apparatus. Under the amendment, the order is extended to include occupations which require riding on a man-lift. The amendment became effective September 30.

The general minimum age for employment under the Fair Labor Standards Act is 16, but the Act authorizes the Secretary of Labor to issue Hazardous Occupations Orders establishing a minimum age of 18 for employment in occupations which he finds to be "particularly hazardous." Secretary Tobin's action follows a public hearing held on the new order and opportunity for comment on the amendment, which took place after available information indicated the particular hazards of the occupations affected.

COMING EVENTS

In the Field of Safety

Nov. 17, Springfield, Ill.
Fifty-eighth Annual Meeting, Illinois Mining Institute. (Abraham Lincoln Hotel). B. E. Schontal, secretary, Illinois Mining Institute, 28 East Jackson Blvd., Chicago 4.

Nov. 27-29, New York
Thirty-second Annual ASA Meeting and First National Standardization Conference. (Waldorf Astoria Hotel). Cyril Ainsworth, assistant secretary, American Standards Association, 70 E. 45th St., New York 17.

Nov. 28-29, Columbia, S. C.
13th Annual Statewide Safety Conference. (Wade Hampton Hotel). John W. Duncan, president, Box 539, Columbia, S. C.

Dec. 11-12, New Orleans, La.
Louisiana Safety Association, Annual Meeting. (Roosevelt Hotel). Col. Charles E. Doerler, secretary, Louisiana Safety Association, Box 806, Shreveport, La.

Feb. 6-7, Philadelphia
Seventeenth Annual Philadelphia Regional Safety Conference and Exhibit. (Bellevue-Stratford Hotel). Walter W. Matthews, managing director, Philadelphia Safety Council, 17th and Sansom Sts., Philadelphia 3.

Mar. 4-6, Birmingham, Ala.
Twelfth Annual Southern Safety Con-

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ference and Exposition. (Tutwiler Hotel). Braxton B. Carr, executive secretary, Southern Safety Conference, 2120 First Ave. North, Birmingham 3, Ala.

Mar. 19-20, Boston
Thirtieth Annual Safety Conference and Exposition. Edgar F. Copell, president, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Apr. 3-6, New York
Twenty-first Annual Greater New York Safety Convention and Exposition. (Hotel Statler). Paul F. Stricker, executive vice president, Greater New York Safety Council, 60 E. 42nd St., New York 17.

Apr. 18-20, Tulsa, Okla.
Annual Statewide Safety Conference. (Mayo Hotel). Glenn V. Carmichael, manager, Oklahoma State Safety Council, Oklahoma City, Okla.

Apr. 19-21, Kansas City, Mo.
Central States Safety Congress. George M. Burns, director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 9, Mo.

Apr. 23-26, Pittsburgh, Pa.
Twenty-sixth Annual Western Pennsylvania Safety Conference and Exhibit. (William Penn Hotel). Harry H. Brainerd, executive manager, Western Pennsylvania Safety Council, 605 Park Bldg., Pittsburgh 22, Pa.

Apr. 26, New Haven, Conn.
Connecticut Safety Society, Annual Conference. Donald H. Ackley, c/o G and O Manufacturing Co., New Haven, Conn. P.O. Box 1860.

May 14-16, Syracuse, N. Y.
Central New York Safety Conference and Exposition. (Hotel Syracuse). Walter L. Fox, executive secretary, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse, N. Y.

May 16-18, Winston-Salem, N. C.
Twenty-first Annual North Carolina Statewide Industrial Safety Conference. (Robert E. Lee Hotel). H. S. Baucom, safety director, North Carolina Industral Commission, Raleigh, N. C.

May 17-18, Duluth, Minn.
Twenty-seventh Annual Conference, Lake Superior Mines Safety Council. (Hotel Duluth). John A. Johnson, chief, Accident Prevention and Health Division, Region V, U. S. Bureau of Mines, 18 Federal Bldg., Duluth, 2, Minn.

June 4-7, Chicago
Twenty-eighth Annual Midwest Safety Conference. (Congress Hotel). Joseph F. Stech, manager, Greater Chicago Safety Council, 10 N. Clark St., Chicago 2.

June 21-23, Salt Lake City
Thirteenth Annual Western States Safety Conference. Marion A. Snow, executive director, Utah Safety Council, State Capitol Bldg., Salt Lake City, Utah.

The Safety Library

(From page 46)

Against Lightning. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. 1950. 46 p. Price 50c. (NFPA No. 78)

Mines

Central Mine Rescue Station, Globe-Miami District Mine Rescue and First Aid Association, Globe, Ariz. Published by U. S. Bureau of Mines, 1950. 20 p. Available from the Bureau, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Penn. Free. (Information Circular 7577)

Report on Electric Blasting in Sinking Shafts and Earthing Systems for Headgears. Published by Prevention of Accidents Committee, Transvaal Chamber of Mines, Johannesburg, South Africa, 1950. 5 p. Free.

Report on Trucks and Tramway Accidents on the Gold Mines of the Witwatersrand and Extensions. Published by Prevention of Accidents Committee, Transvaal Chamber of Mines. Johannesburg, South Africa, 1950. 25 p. Free.

National Defense

Atomic Warfare. Published by Home Office, Civil Defense, 1950. 61 p. Available from the British Information Service, 30 Rockefeller Plaza, New York 20, New York. Price 28c.

United States Civil Defense. Published by National Security Resources Board, 1950. 162 p. For sale by the Superintendent of Documents, Washington 25, D. C. Price 25c. (NSRB—Doc. 128)

Petroleum Industry

Review of Fatal Injuries in the Petroleum Industry for 1949. Published by American Petroleum Institute, 50 West 50th Street, New York 20, N. Y., 1950. 12 p. Free.

Quarry Industry

Information on the Prevention of Quarry Accidents. Published by U. S. Bureau of Mines, 1950. 88 p. For sale by the Superintendent of Documents, Washington 25, D. C. Price 30c. (Bulletin 473)

MAGAZINE ARTICLES

Color

Functional Colors in Sawmills Mean Higher Efficiency, Greater Safety. (In British Columbia Lumberman, August 1950. p. 41.)

Commercial Vehicles

Safety for All. (In Motor Transportation, September 1950. p 27.)

Hands

Industrial Physicians Sound Warning in Hand Accidents. By H. H. Slawson. (In Modern Machine Shop, September 1950. p 104.)

Organization

How We Have Reduced Accidents. By W. H. L. Lovell. (In Machine and Tool Blue Book, October 1950. p 221.)

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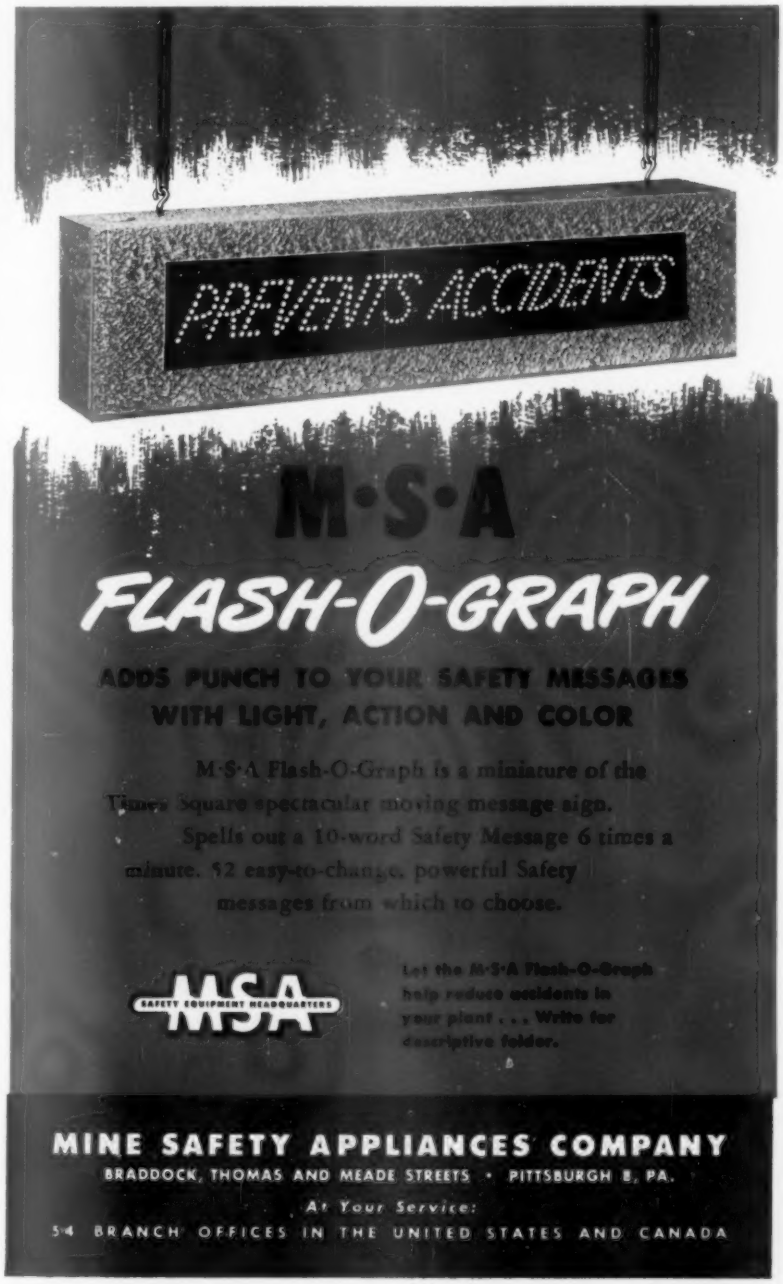
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Green Cross News . . .

Activities of Local Safety Councils and Chapters

Managers Would Broaden Industrial Services

More than 100 safety council managers who attended the two-day Managers' Conference in Chicago October 13-14 were given helpful suggestions for building stronger industrial support for their programs.

Three sessions were of particular interest in this connection. Clarence J. Muth, manager of the Safety Division of the Milwaukee Association of Commerce, led a panel on methods of creating more interest in foremen's training courses. Managers Reyburn Hoffman of St. Louis, Paul F. Stricker of New York, Joseph F. Stech of Chicago and R. Brandon Marshall of Denver assisted in this program.

A novel plan was presented by Dr. J. L. Rosenstein of Loyola University, following successful try-outs in Cleveland, Kalamazoo and Chicago. A series of three sessions with Dr. Rosenstein as the speaker, each session to be followed by one or more "Human Factors in Safety" slide films, will be made available to the managers as an industrial service to their members. It is proposed that the series should start with an evening program followed next day by morning and afternoon sessions.

The third program that opens opportunity for enlisting greater interest on the part of industry was an aviation safety project. This session was led by Sidney J. Williams, assistant to the president, NSC, and panel participants were Col. C. L. Cornish, director of the Aeronautics Commission of Indiana, Clarence F. Williams, executive director, Utah Safety Council, Ralph W. Ellis, executive vice president, Hampden County Accident Prevention Council, Springfield, Mass., and Joseph M. Kaplan, secretary-manager, Greater Los Angeles Chapter, NSC. The Springfield organization was the first local council to set up an aviation council.

Other subjects that had special appeal were the local council's part in the official Civil Defense programs and the application of the newly revised Social Security law to local and state safety council employees.

Fifteen councils had attractive exhibits lining the walls in the South Ballroom of the Stevens. Ned H. Dearborn was the featured speaker at the Friday luncheon for the managers.

Councils Win Awards

Awards in the annual "Special Achievements" competition and in the Inter-Council Fleet and Inter-Plant Safety contests were presented at the Friday luncheon by Ned H. Dearborn. First place awards in "Special Achievements" were as follows:

Greater Dayton Safety Council, for Fire Prevention program.

Eastbay Chapter, National Safety Council, High School Journalism contest.

Erie Safety Council, "Safety Week" observance.

Fort Wayne Safety Council, Pedestrian Education.

Hamilton Safety Council, visual education, "Pardon My Speed" slide-film.

Lansing Safety Council, Baby Sitter project.

Greater Los Angeles Chapter, NSC, Dramatized Board meetings.

Oklahoma City Safety Council, "Safety Survey" magazine.

Safety Division, Syracuse Chamber of Commerce, Radio Salute to Safety.

An honorable mention certificate was presented to the Los Angeles Chapter for its safety work in special areas.

The first place award in the Inter-Council Fleet contest was won by the Automobile Club of Rhode Island. First honors in the Inter-Plant contest among councils were won by the Delaware Safety Council.

Conference Meets

Eighty members of the Conference of Local Safety Organizations met Monday afternoon, October 16, at the LaSalle Hotel to discuss the new Council "Participation Plan" and consider recommendations from the Procedures Committee of the Conference. The Annual Conference Banquet followed the meeting.

Industry Advertises Safety

Ten years ago the Allen Dairy Products, Inc., of Ft. Wayne, decided to devote two-thirds of its paid advertising space to local safety and health education. This was done at the suggestion of S. T. Martin, executive vice president of the company. To date more than 2,100 of the ads have been run. The firm, an active member of the Fort Wayne Safety Council and the National Safety Council, has found this valuable educational contribution is also an excellent good-will builder. Each ad is a three column-five inch display and features two boxes. One is captioned "For Safety," the other, "For Health." To date more than $30,000 has been expended in this worthy promotion.

Tractor Safety

The Greater Atlanta Safety Council recently conducted a safety course on tractor operation for 175 beginners from rural areas near the city. The course was con-

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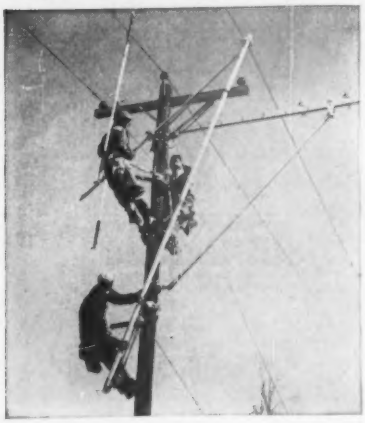

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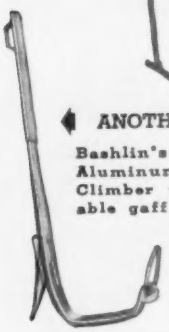

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Write Today for Catalog No. 50

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GROVE CITY 3, PA.

ducted by Andy Springer, safety engineer of the Council, in cooperation with county agents. The Council also took an active part in the recent safety rally of the N.C.&St.L. Railroad Company on September 28, attended by 2,000 railroad employees and their families.

Building Safety

A building safety and fire prevention course conducted by the Safety Council of the Rochester Chamber of Commerce (N.Y.) started September 28. Fifteen sessions are planned for successive Thursday evenings. The course covers injury causes, hazards and falls, elevator safety, pressure vessels and machine guards, safe use of hand tools, toxic materials, chemistry of fire extinguishment, fire safety laws and codes and electrical hazards. The course is for building superintendents, maintenance departments and employees of hotels, churches, theatres, schools, apartment houses, stores, hospitals, offices and public buildings. The tuition fee is $15.

"Accident Handbook"

The Children's Hospital, a unit of the Children's Medical Center, Boston, has published an "Accident Handbook," and the Massachusetts Safety Council is assisting in a wide distribution of the booklet. The pamphlet tells what to do—and what not to do—for head injuries, burns, poisons, cuts, fractures, bites, convulsions, and foreign bodies in the eye, ear, nose, or throat. "Things to keep on hand" for emergency are listed and a safety check list of 20 suggestions is included in this practical and attractively printed handbook. The text was compiled by members of the Children's Hospital staff.

Judge Skeel Honored

Honorable Lee E. Skeel, who has been president of the Greater Cleveland Safety Council for many years, recently became Chief Justice of the Court of Appeals for the Eighth Appellate District in Cleveland. Judge Skeel has a wide circle of friends in the safety movement who will be pleased to hear of this important step upward in his long and honorable judicial career. Also they will be glad to learn that he has recovered from a recent illness that kept him hospitalized for several weeks. Judge Skeel is a member of the National Safety Council Board of Directors and for several years was vice president for Local Safety Organizations.

Flaming Red

The October issue of the Baltimore Safety News devoted its entire contents to fire prevention and was printed in flaming red. The official poster used for Fire Prevention Week this year was drawn by Walker G. Wilkinson, a Baltimore artist. The Baltimore Safety Council and Manager John Rostmeyer have always been prominently identified with Baltimore's fire prevention activities.

Safety Thirst

Safety council managers in several cities are interested in the new Safety Slogan drinking cups now on the market and are making them available to their local plant members. Three safety slogans make up the series at present, and the paper cartons are available in several sizes.

Calendar Contest Winners for September

First prize in the National Safety Council's Safety Calendar Contest goes this month to Mrs. Marjorie V. Grove, of Dayton, Ohio. The theme in this contest was teamwork for safety. Mrs. Grove's two-line rhyme was adjudged best of all those submitted. It was:

When done with tools be a
put-it-away'r,
A do-it-now'r, not a let-it-lay'r.

Second prize went to Don Smith, Mid-States Steel & Wire Co., Crawfordsville, Ind., for this rhyme:

Use your head but not this way
Clean your work place up today.

Third prize was awarded to Miss Ann Brower, stenographer, B. J. Byrne, lawyer, Keota, Ia., for the following rhyme:

Pick 'em up, hang 'em up, each
one in its place,
Saves your time, "SAFES" your home,
also "saves your face."

Thirty $5 awards were issued to:

Lorene Frederick, Bear Creek, Ala.

Mrs. B. B. Munsey, Dallas, Tex.

Joe Short, Alpha Portland Cement Co., Manheim, W. Va.

Mrs. C. P. Buist, New Orleans, La.

Alma Simmons, Sales Dept., Morse Chain Co., Detroit, Mich.

Mrs. Mary A. Brown, Brooklyn, N. Y.

H. E. Whelen, commercial artist, Chicago, Ill.

Mrs. Irvin Greer, Baldwin, Kans.

Mrs. Evelyn Coward, Cullowhee, N. C.

L. Georgia Tate, teacher, Janesville, Wis.

Irene Gerhart, Santa Ana, Calif.

Mrs. Jennie V. Snyder, Beechwood, N. J.

G. V. Bauer, Denver, Colo.

Charles Waranow, West Somerville, Mass.

Mrs. George A. Gannon, St. Louis, Mo.

Mrs. Ida Brader, Buffalo, N. Y.

Mrs. Shirley O'Rourke, Rose City, Mich.

R. T. Gidley, Dallas, Tex.

Marie M. Hinde, Salina, Kan.

A. Corliffe, Howard Smith Paper Mills, Ltd., Cornwall, Ont., Can.

Lem Levinson, Marine Machinist. Bethlehem Steel Shipyard, Terminal Island, Calif.

Mrs. B. G. Goddard, St. Louis, Mo.

Mrs. Pauline Killmer, Yacolt, Wash.

E. F. Baker, Sheet Fabr. Dept., roller operator, Cont. Steel Corp., Kokomo, Ind.

Mrs. H. Johnson, Jr., Keokuk, Ia.

Mrs. Chas. Richman, typist, Bentley-Settle, Syracuse, N. Y.

Mrs. Merle Imes, Basehor, Kans.

Mrs. Margaret Van Cott, Woodland Hills, Calif.

Robert Churilla, Socony-Vacuum Oil Co., Inc., East Chicago, Ind.

R. L. Barron, Standard Oil Co., Sugar Creek, Mo.

A new contest is offered each month through the safety calendar.

New Flour Mill Record

Pillsbury's Buffalo Mill during September passed the highest safety record yet claimed by any United States flour mill.

The 534 employees of the mill completed more than 1,750,000 man-hours of work without an injury causing loss of working time.

The previous record for a flour mill recognized by the National Safety Council was 1,145,200 man-hours. This has also been passed by Pillsbury's 1,438, Springfield, Ill., mill employees who have reached a total of more than 1,430,000.

Pillsbury's Buffalo Mill has not suffered a disabling injury since May 12, 1949. The Springfield mill has been accident free since February 24 this year.

You know how to operate this extinguisher JUST BY LOOKING AT IT!

It's a Randolph!

The *first 10 to 30 seconds* can mean the difference between *no loss* and *complete destruction* when fire starts. That's why Randolph's simple, *obvious* operation is so important in stopping fires *before* they spread!

Anybody can get a Randolph into action FAST! No valves to turn, no nozzles to adjust; just point and press your thumb! Randolph's snowy CO_2 is non-damaging, evaporates without a trace. It's non-toxic, won't conduct electricity, deteriorate or freeze. Underwriters' Approved.

A COMPLETE LINE OF CARBON DIOXIDE EXTINGUISHERS AND AUTOMATIC SYSTEMS

Learn how Randolph gives your plant better *preventive* fire protection! Write Randolph Laboratories, Inc., 2 East Kinzie St., Chicago 11, Illinois.

Randolph
SIMPLIFIED FIRE EQUIPMENT

For Distinguished Service

Recent presentations of the National Safety Council's Award of Honor for Distinguished Service to Safety

Stars indicate number of awards since the first.

American Steel & Wire Co.

Central Furnaces and Docks, Cleveland, Ohio—For operating without a disabling injury from December 29, 1948 to May 31, 1950.

Trenton Works, Trenton, N. J.—The 1949 injury frequency rate was only 25 per cent of the group average—injury severity rate 59 per cent of such average. The injury frequency rate was reduced 19 per cent and the severity rate 46 per cent in 1949 as compared with 1948.

★★★★★★★ E. I. Du Pont de Nemours & Co.

Wilmington, Del.—The 1949 injury frequency rate was only 9 per cent of the group average—injury severity rate was but 21 per cent of such average. Injury frequency rate reduced 19 per cent and severity rate 54 per cent in 1949 as compared with 1948. The award was presented on the *Cavalcade of America*, October 10, 1950, by John Stilwell, vice-president, Consolidated Edison Company of New York, Inc.; a trustee and past president of the National Safety Council.

Ford Motor Co.

Lincoln-Mercury Div., Lincoln Plant, Detroit, Mich.—For the operation of 3,196,154 man-hours without a disabling injury from January 19, 1950 to June 14, 1950.

General Electric Co.

Bucyrus Lamp Works, Bucyrus, Ohio—For operating without a disabling injury during the years 1947 through 1949.

East Boston Lamp Works, East Boston, Mass.—For the operation of 5,757,924 man-hours without a disabling injury.

Ohio Lamp Works, Warren, Ohio—For the operation of 5,625,860 man-hours without a disabling injury.

Tiffin Plant, Tiffin, Ohio—For operating without a disabling injury from December 17, 1948 to July 1, 1950.

Hotpoint, Inc.

Plant No. 1, Chicago, Ill.—The 1949 injury frequency rate was only 23 per cent of the group average—severity rate but 48 per cent of such average. Injury frequency rate reduced 75 per cent and severity rate 79 per cent in 1949 as compared with 1948. The award was presented August 29, 1950 by George MacDonald, senior engineer, Industrial Dept., National Safety Council; staff representative for the Electrical Equipment Section.

Plant No. 2, Cicero, Ill.—For the operation of 3,155,371 man-hours without a disabling injury from January 21, 1949 to December 31, 1949. The award was presented August 29, 1950 by George MacDonald.

★★ National Tube Co.

National Works, McKeesport, Pa.—For the operation of 4,949,404 man-hours without a disabling injury from September 7, 1949 to February 28, 1950.

Service Pipe Line Co.

Tulsa, Okla.—The 1949 injury frequency rate was only 41 per cent of the group average—injury severity rate but 39 per cent of such average. Injury frequency rate reduced 40 per cent and injury severity rate 68 per cent in 1949 as compared with 1948.

"Little Orkie," an imp who gloats over other people's misfortunes, unintentionally carries many a safety message to General Electric employees through the various editions of G-E Work News. "Orkie" is the creation of Cartoonist Jim Barstow. This strip was inspired by the recent presentation of the National Safety Council's Distinguished Service to Safety Award to Nucleonics Department of General Electric's Hanford, Wash., works.

AND A HUMAN INTEREST ACCIDENT
OH BOY! AN ACCIDENT! LOOKS LIKE A BAD ONE.... YIP-PIE!
GANGWAY! WHA HOPPEN? ONE SIDE PLEASE! TSK! TSK! TSK! HOW MANY KILLED AN' INJURED?
SSSSH
YOUNG MAN, CAN'T YOU BE QUIET? DURING THESE CEREMONIES? THE NATIONAL SAFETY COUNCIL IS GIVING US THE DSTS AWARD! TODAY!
OH... NUTS
© DISTINGUISHED SERVICE TO SAFETY

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Keep stairs safe!

Keep ramps safe!

Keep All Walkways Slip-Proof With

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The Plastic Abrasive Brush-Coating

Horn Tread-Sure produces a heavy antiskid surface on wood—concrete—or steel deck flooring. It is an abrasive-filled plastic brush-coating—simple to apply. It is resistant to gasoline, alcohol, oil and grease and many types of acids. Whether the surface is wet, dry or oily it provides a non-skid safety footing, preventing falls.

Designed for exterior as well as interior use, it may be brush applied over other paint or direct to unpainted surfaces. Used as it comes from the container. Available in three colors: Battleship Grey-Red-Green.

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SIZES OF HOFFCO-VAC Portable VACUUM CLEANERS and
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For your campaign against dust that is hazardous to health or damages production, Hoffman offers a broad selection of vacuum cleaning equipment with a type and size exactly right for your cleaning problem. Heavy-duty portables in 1½, 3, 5 and 7½ horsepower models, plus a 5 H.P. model powered by gasoline engine. For these, or the wide range of stationary systems, your Hoffman representative can furnish exact recommendations.

NEW! 1½ H.P. HOFFCO-VAC operates 35-ft. Length of Hose

Industry's first BIG little vacuum cleaner! Built for heavy-duty, continuous service. *Big* in dust storage capacity, suction and dust separation, yet compact, portable and easy to operate.

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Obituary

J. R. GORDON

JOHN RUSSELL (RED) GORDON, chief safety engineer for Lion Oil Company, El Dorado, Ark., died September 17 in a local hospital after an illness of two weeks.

An employee of the Lion Oil Company for 14 years, Mr. Gordon had been chief safety engineer since 1942. He was president of the Southern Safety Council, which comprises 11 southern states; chairman of the Arkansas-Louisiana Chapter of the American Society of Safety Engineers; member of the board of directors of the Arkansas State Safety Council, and president of the El Dorado Safety Council.

He had served on various safety committees of the American Petroleum Institute. He was an elder in the First Christian Church of El Dorado and a 32nd degree Mason.

During World War II he was a special agent for the U. S. Department of Labor engaged in helping war industries organize safety programs.

Mr. Gordon was born in McAlester, Okla. He was an all-state high school quarterback and later a baseball player in Oklahoma. He was well-known to radio audiences for his play-by-play broadcasts of football games for the past 12 years.

Surviving are his widow, a son, Tammy, his mother, and a sister.

JOHN F. McMAHON

JOHN F. MCMAHON, managing director of the Industrial Hygiene Foundation, Pittsburgh, died suddenly in his office September 15.

Born in South Waverly, Pa., in 1903, Mr. McMahon attended school in Sayre, Pa., and was graduated from the University of Notre Dame in 1928. From 1929 to 1931 he served as a reporter on the *New York Sun*. Subsequently he was assistant to James T. Grady, public relations director for Columbia University, the American Chemical Society, and other technical organizations. In 1932 he came to Pittsburgh as night editor for the Associated Press.

After four years with AP he joined the Industrial Hygiene group at Mellon Institute to take charge of public relations. Six years later he succeeded the late Dr. H. B. Meller as managing director of the Industrial Hygiene Foundation. He was the author of numerous forceful articles on industrial health, and the Foundation became an active force in the promotion of occupational hygiene.

He is survived by his widow, Mrs. Ruth B. McMahon, and by two sons, John F., 14, and Michael B., 11.

Present Certificate to 1000th "Wise Owl"

Secretary of Labor Maurice J. Tobin, stressing the need for reduced eye accidents on America's production lines, recently enrolled the 1,000th industrial worker in the Wise Owl Club of America, an eye-safety organization sponsored by the National Society for the Prevention of Blindness.

The Wise Owl Club, founded in 1947 at the St. Louis plant of the American Car and Foundry Company, has been sponsored by the National Society for the past 22 months. To be eligible for membership, a worker must prove that his goggles saved him from partial or complete blindness when an accident occurred.

The 1,000th Wise Owl was Clayre Pomeroy, a machinist at the Phoenix, Ariz., plant of the Reynolds Metals Company.

At the special enrollment ceremony held in his office, Secretary Tobin heard Mr. Pomeroy describe how he almost lost the sight of his left eye. He was operating a boring mill, using a carboloy bit, when a chip flew off the tool, striking the left lens of his goggles.

Dr. Franklin M. Foote, executive director of the National Society, welcomed Mr. Pomeroy into the Wise Owl Club. He said that "of the 1,000 Wise Owl members, 330 would be completely blind today if they had not been wearing goggles when an accident occurred. The 770 others would have the sight of only one eye."

PROTECTION PROBLEM?

MODEL R-45—Natural rubber, palm coated, standard weight, knit wrist, curved finger, with nonskid finish for use in general utility work.

HOOD

Gloves will fit any job *better!*

MODEL R-46—Natural rubber, fully coated, standard weight, knit wrist, curved finger, liquid proof, nonskid finish for utility work.

Many and varied are the dangers to which employees' vital hands are exposed in industry today. And many and varied are the brands and types of gloves available for their protection. To be *sure* you are providing the best protection possible, you owe it to your workers *and* your business to see the Hood line first!

Shown here are two of the many types of Hood gloves available . . . gloves that have resulted from the combined efforts of experienced chemists, engineers and technicians, using the most modern equipment and techniques to give Hood a reputation for reliability *second to none!*

Let this reputation be your guide for solving *your* protection problem *better!* Write for catolog today showing the Hood line of Neoprene, Rubber or Plastic coated gloves for *every* job in *all* industries!

HOOD for NEW Safety PLUS

HOOD RUBBER CO. Watertown, Mass.

LENS-M

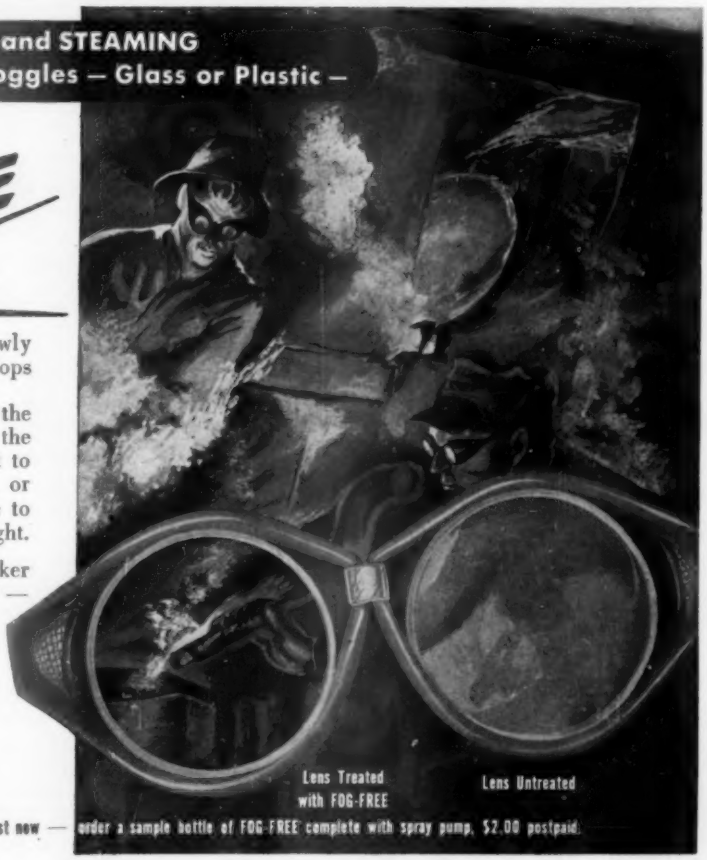
Eliminates FOGGING and STEAMING of Eyeglasses and Goggles — Glass or Plastic —

FOG-FREE

TRADEMARK

This special liquid, made possible by a newly discovered physico-chemical principle, stops fogging and steaming of eyewear.
Once applied, its invisible coating resists the formation of fog or moisture particles under the most severe conditions—humid summer heat to freezing temperatures, hot steaming vapors, or body heat. Now your employees won't have to remove fogged goggles and risk loss of eyesight.

FOG-FREE pays for itself in increased worker efficiency. Non-Hazardous — Easily Applied — Lasting Effect.



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Make your own test now — order a sample bottle of FOG-FREE complete with spray pump, $2.00 postpaid.

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200-14L

There's a *Big* difference between Asbestos Gloves and you can *tell* the difference when you get Industrial's 200-14L asbestos gloves. *The quality stands out in* your hands and *on* your hands. Seamless one piece construction from tip to top. No seams at the wrist or working edges to pull out or burn out just when protection is needed most on a hot job. The 200-14L has a knitted cotton lining (not woven) anchored in each finger and in thumb. *The quality stands out* in the correct design and proportions of the big roomy pattern that allow a cool, comfortable fit. They are double sewn. Standard 11, 14 and 23 inch lengths. Other lengths and many special types of asbestos gloves and mittens are available both lined and unlined. The quality of all these items stands out because they are all made of sturdy, close woven 2½ pound per square yard Underwriters grade Asbestos cloth . . . from the best mills in the United States.

Be safe—use Industrial's Safety Apparel backed by 40 years of experience and know-how that means dependable low cost protection for rough, tough service.

We are designers and manufacturers of a complete line of Industrial Safety Apparel. Write for catalog and tell us your requirements.

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The Reader's Point of View

Comments on topics of current interest are always welcome. They need not agree with the opinions of the editors.

Fire Doors

CHICAGO—I would like to comment on an article, "Safer Stair Wells," which appeared in the August, 1950, issue of NATIONAL SAFETY NEWS.

The question in my mind is, "Have the stairwells been made safer for emergency use as exits during a fire?" I believe that the value of these enclosures, as a place of refuge and as a means of egress without panic during a fire in the building, has been destroyed by the method described in this article for holding open the fire doors in the stairway enclosures.

It is true that Mr. Munson has solved the double-swinging door problem, and the gravity ventilation problem. It is also true that the primary purpose of providing a fire-resistive enclosure for stairways (from a fire protection point of view) is (1) to confine a fire to the floor of origin, and (2) to provide a means of safe egress by occupants of a building under fire conditions. The idea of using stairwells as means of gravity ventilation for the building does not enter the picture.

While I have no way of knowing, at this writing, the type of construction of the building, it appears as though considerable effort in design of the building was expended to provide a *good*, fire-resistive enclosure for the stairways, with *standard class B fire doors* at the openings into hallways at each floor level. To hold these fire doors in the open position, for any reason, with any type of device, amounts to defeating the primary purposes of the stairwell enclosures. The action of fusible links (in this case, 160 degree F fusible links) is too slow to function in time to prevent dangerous concentrations of heated gases and smoke in the stairshafts, as well as throughout various portions of the building. Likewise, reliance should not be placed on manual operation of these doors by occupants of the building.

I believe that the first mistake made is reflected in the statement, quote, "Hallways and landings are separable by *fire doors that were kept open* while double swinging doors separated the landings from the stair wells as a fire and smoke barrier." Fire doors in stairway enclosures are intended to be self-closing, and to remain normally in the closed position.

The sketch accompanying the article indicates that there may exist a suitable arrangement of stairwell and ventilated landing to provide a Type 1 Enclosure (Smokeproof Tower), described in the National Fire Protection Association, Building Exits Code, Tenth Edition, 1949, page 13. To accomplish this it would be necessary to replace the present double-swinging doors with standard Class B fire doors, arranged for self-closing; at the same time, existing fire doors between hallways and landings would be retained, also arranged for self-closing operation. While the Building Exits Code calls for the landing to be continuously ventilated to the outside by a permanent wall opening, I believe it would be satisfactory to retain use of the present fused windows. A smokeproof tower is considered to be the ultimate in protection of vertical building openings, both from the standpoint of safe egress and of limiting the spread of fire. It will also reduce the tendency toward panic of building occupants by providing egress with minimum contact with fire, heat, and smoke.

If, in this situation, the smokeproof tower is out of the question, the next best solution to the problem is to (1) remove the double-swinging doors, (2) remove the fused catches from the fire doors between landings and hallways, thus making them self-closing by means of the door-check as they were originally. Such an arrangement would be similar to the Type 2 enclosure described on page 14 of the Building Exits Code.

My interest in writing is to try to prevent continued misconcep-

tion of the purpose and need for adequate enclosures for vertical building openings; also to curb reliance on slow operating devices, where time element is of first importance, as it is during evacuation of building occupants under fire conditions.

WILLIS G. LABES
Assistant Professor,
Fire Protection Engineering,
Illinois Institute of Technology

The Du Pont Safety Story

(From page 42)

safety, fire prevention or protection.

Through membership in various national organizations it keeps in touch with the progress of safety and fire protection throughout the country.

It makes periodical fire and safety inspections of all du Pont and subsidiary plants and properties where conditions warrant. These are engineering surveys covering all phases of fire prevention, fire protection and safety. Detailed reports are prepared and furnished to those in charge of the properties inspected and to department heads.

All major and sub-major injuries, fires and explosions as well as losses resulting from windstorms, floods, lightning, flywheel and engine breakage, sprinkler leakage, plate glass breakage, building collapse, etc., are reported, recorded and analyzed as to cause, adequacy of protective devices, supervision thoroughness, etc.

Among the many statements made by du Pont executives affirming the company's attitude toward the prevention of personal injuries, four examples of top-management thinking and attitude have been selected, namely:

Mr. Lammot du Pont (President, 1926-1940, and Chairman of the Board of Directors, 1940-1948) in 1936 wrote: "From a humanitarian standpoint, the work of preventing personal injuries in the plants and operations of the du Pont Company and its subsidiaries is considered most worthwhile. Its object is to safeguard the employees thus reducing the probability of fatalities and unnecessary injuries, and eliminating the

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HERC-ALLOY is America's ***first alloy*** steel chain. For slings or other applications HERC-ALLOY Chain will prove that efficiency, safety and economy can go hand-in-hand.

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CHAIN CORPORATION
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Removes 2 TONS of incrusted dirt in less than 8 HOURS!

IN ONE OPERATION a Tennant Machine cuts grime from floor . . . picks it up. Many models, electric or gas. Also 36" and 24" high speed POWER SWEEPERS for dust, litter, debris.

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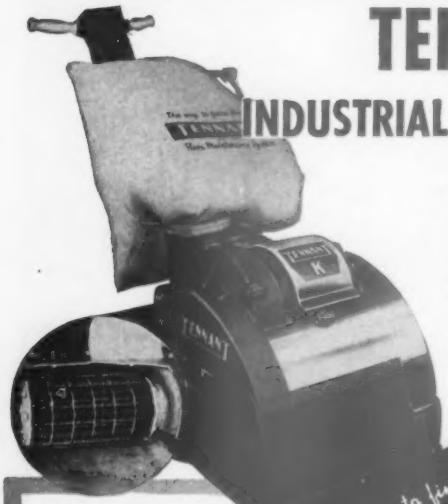

Pulverizing and shearing thick hard grime from floors at the amazing rate of 8 to 20 lbs. per *minute*, the Tennant Industrial Floor Machine makes a fast, easy job of *any* floor-cleaning assignment, no matter how tough!

Removes hardened tar, grease, dried paint, cement splashes and similar material like magic.

Guaranteed to do the job!

REVO-tool pulverizes and removes thick incrusted grime. Provides over half million impacts per min.

The way to finer floors
TENNANT
Floor Maintenance System

FEATURES

- **REQUIRES ONLY 1 MAN**
- **PICKS UP SOILAGE** as it goes. Eliminates extra sweeping.
- **SMOOTHS AND LEVELS** surface while cleaning. Leaves floor hard, dry, ready for traffic.
- **ELIMINATES CHEMICALS** or need for soap and water
- **NO INTERFERENCE** with normal plant operations.

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Tennant 24" Power Sweeper for fast sweeping in busy plants.

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anguish and suffering which follow such events. This preventive work teaches the employe to think, makes him more efficient, contented and happier. It safeguards the trained worker, results in more loyal workmen, and it is economically a paying proposition. This reduction in suffering, maiming of employees, and loss of life, warrants all the time, effort and expense involved in carrying on the Company's work to prevent personal injuries."

Several years ago Mr. W. S. Carpenter, Jr., Chairman of our Board of Directors stated, "I believe that employee safety is of prime importance . . . We, in the du Pont Company, long ago concluded that the safety of employes is of the greatest interest to management, ranking in importance with production, quality of product, and costs. We have found that maintenance of safe operating procedures in our plants is of benefit far beyond any resulting dollar savings, the human values involved being of greater importance to both employer and community . . ."

On January 19, 1950, Mr. Crawford H. Greenewalt, President, in presenting the "Certificate of Merit" (recognition of winning the President's Award under the Company's plan of "Awards for No-Accident Records") at one of the Company's largest plants said: "Safety has always been a major objective with the du Pont Company. This stems, of course, from a concern for our employees' welfare and well-being . . . The du Pont Company had 95 major injuries in the year 1949. Had our performance been no better than the performance of the chemical industry as a whole, we would have had about a thousand lost-time injuries. That's the saving of 900. Some of those 900 lost-time serious injuries that did not take place might have been fatalities. That is a saving beyond price. It certainly justifies the money and the effort that du Pont people devote to safety work . . ."

For at least two decades the du Pont Company refused to accept accident-proneness, age, length of service, etc., as the actual causes of personal injuries. After a thor-

ough analysis of thousands of minor injuries and many major injuries as to cause, it was concluded that those alleged causes were really alibis or excuses which had been used so often and for so long for ineffective safety programs that they were accepted as legitimate causes. It was invariably found that the recurrence of injuries to certain employees could be prevented if conditions under which they were working were improved. In some instances it was the question of lighting, in others, types of tools or the way they were used, unsafe practices ignorantly followed, carelessness or chance-taking, non-adherence to operating rules or safety regulations or possibly a physical cause such as defective eyesight. The alleged causes—accident-proneness, age or length of service—were found to be spurious, for proper training, education and adequate supervision are preventing such injuries.

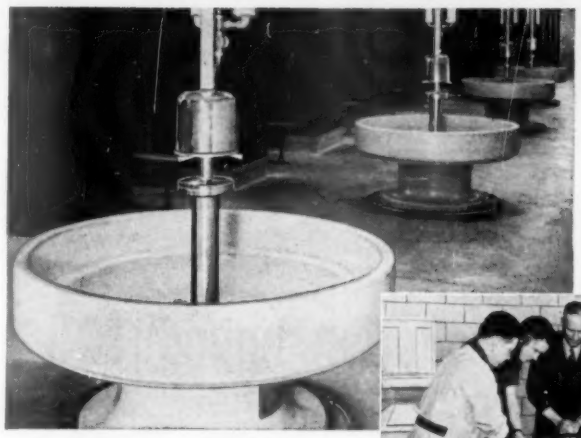
During the past quarter century several types of safety contests to inspire and sustain employee interest in safety have been used. The object of the earliest contest was to teach employees to recognize unsafe practices and unsafe conditions.

Since this contest in 1927, several contests to establish injury-free records, of from one to six months in length were initiated. The results were excellent. The last major inter-plant contest, January 1 to June 30, 1935, included all company and subsidiary plants, operations, laboratories, warehouses, magazines, etc. It was based upon the "finding and eliminating of unsafe practices and the uncovering and remedying of unsafe conditions." Only employees below the classification of foreman or group leader were eligible. During this six-months' contest nearly 56,000 unsafe practices and unsafe conditions were reported and at the end of the contest, over 49,000 of these hazards had been corrected. (Reported in the February, 1936, issue of NATIONAL SAFETY NEWS.)

The du Pont Company's "President's No-Accident Plan" was established in 1923 when a company plant with 200 men established a

No Waiting in Line with Time Saving

BRADLEY WASHFOUNTAINS



SAVE
TIME
SPACE
WATER

• Many plants still lack adequate wash facilities. If additional equipment is needed in your plant, investigate the many advantages of Bradley Washfountains.

Easily installed, with only three piping connections, each Washfountain serves 8 to 10 workers simultaneously. Automatic foot-control plus self-flushing bowl and easy-to-clean single sprayhead assure utmost health protection. Maintenance is kept to a minimum, water economy realized, and employee morale improved, with efficient, convenient Bradleys.

The Standard for 30 Years

During the past 30 years, Bradleys have become established as the standard for factory washrooms. Original installations can be augmented at any time—we'll be here to furnish you with complete equipment, replacement parts, or service. BRADLEY WASHFOUNTAIN CO., 2237 W. Michigan Street, Milwaukee 1, Wisconsin.

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As a guide to washroom planning, write for our illustrated Catalog 4701 today.

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WHAT THEY SAY ABOUT ZORBALL—
Wyandotte's New All-purpose Floor Absorbent

Engineer—*"does not get sticky or slippery"*

Foreman—*"use only half as much"*

Janitor—*"sweeps up in half the time"*

Foreman—*"lasts longer than any other material"*

Fire Chief—*"reduces fire hazards"*

Foreman—*"stands up under rough treatment"*

Chemist—*"does not break down in oils or water"*

Zorball is going to be better than ever . . . and there's going to be more of it. That's right, Wyandotte is doubling its production of Zorball, the all-purpose floor absorbent. We're installing new screening equipment and a giant new rotary kiln. Why? Because more and more people are finding out that *Zorball is best.* If you haven't used Zorball yet, ask your Wyandotte Representative or Supplier to show you the Twin Tests. Test No. 1 shows you how a floor absorbent works. Test No. 2 shows you the difference in floor absorbents. Be sure to see them!

THE WYANDOTTE LINE— ***all-purpose floor absorbent:*** Zorball; ***floor wax:*** Anti-Slip Wax; ***germicides:*** Steri-Chlor, Spartec; ***maintenance cleaners:*** Detergent, F-100, El-Bee, Paydet; ***detergent-sanitizers:*** Tri-Bac, Kromet—**in fact, specialized products for every cleaning need.**

WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN
SERVICE REPRESENTATIVES IN 88 CITIES

Wyandotte
REG. U. S. PAT. OFF.

no-injury record of over 1,000,000 man-hours by operating 28 months without a disabling injury. This was so outstanding that Mr. Irénée du Pont, then president, offered to recognize personally a record made by any plant of the company which equalled or bettered this record. Goals which were established for the different plants on a comparable basis were considered real challenges. Between April, 1923 and 1927, 19 plants equalled or bettered the outstanding safety record of 1923. As of January 1, 1928, the plan was revised and became known as the "Award for No-Accident Records." It offers three prizes, the General Manager's Award (Old President's Prize), President's Award and the Board of Directors' Award, the latter being considered at that time so difficult to attain that few if any plants would win it.

Since that time, as of September 30, 1950, 133 plants have won the General Manager's Award 195 times, 110 plants have won the President's Award 154 times, and 67 plants have won the Board of Directors' Award 207 times; (one plant having won the Board of Directors' Award 11 times; one 13 times and one 16 times) a grand total of 556 "No-Accident Award Plan" awards having been won in the past 27 years.

The earliest du Pont Company personal-injury records available and considered dependable start with 1912. In that year with a reported total man-hour exposure of 16, 188,000 the frequency rate was about 43.15, the severity rate 9.26, and the fatality rate .068. The next year, with a slight reduction in employment, the frequency rate was reduced to 37.54, but the severity rate increased to 10.70 and the fatality rate to 1.58. It is well known that even at that time du Pont injury experience was much better than industry as a whole. The du Pont Company's 1949 record is—man-exposure hours worked 155,265,000, frequency rate .62, severity rate .19, and the fatality rate .02. Frequency rate for the first nine months of 1950 is .56.

Sometimes the significance of reduction in frequency, severity and fatality rates is not immediately

appreciated. Had the average annual frequency, severity and fatality rates for the six-year period, 1920 to 1925 inclusive—frequency rate (disabling injuries per 1,000,000 man-hours worked) of 12.57; severity rate (time charges "days" per 1,000 man-hours) of 4.37; and fatality rate (number of deaths per 1,000,000 man-hours worked) of .52—prevailed throughout the 24-year period of 1926 through 1949, 34,600 temporary disabling injuries would have occurred instead of 3,700, a difference of 30,900; 5,000 permanent partial disabling injuries instead of 1,700, a difference of 3,300; and 1,708 fatalities instead of 269, 1,439 more deaths—over 35,600 employees saved from injury, suffering, being maimed or killed in this 24-year span.

Several plants have established world records. The record established by the Martinsville Plant in 1949 is now over 25,000,000 man exposure hours as of September 27, 1950, and is continuing unbroken. In addition to the current world's best no-injury record, 19 other du Pont plants hold best records in their industrial clasification such as rayon, plastics, photographic films, high explosives, paints, varnishes, lacquers, acids, construction jobs, foundry and machine shops, etc., records ranging from 2,663,882 man-hours to over 25,000,000—records which total over 128,000,000 man-hours without a disabling injury.

During the past five years from 57 to 116 company plants, laboratories and construction operations operated each month without a disabling injury, an average of 87 per month for each of the sixty months. Equally remarkable safety records of low total exposure hours but outstanding records on a day or year basis have been established by small plants and laboratories. For example, there are six plants and laboratories which have worked from 6,350 days up to 8,610 days, records of from 17 to 23½ years without a lost-time injury.

During the past ten years, the du Pont Company has received from the National Safety Council an average of forty plaques each

Eyes RIGHT for your RIGHT Pyrenes!

Buy them the reliable, prompt, economical, easy way—from your local Pyrene jobber

There's one best extinguisher to guard any fire hazard. Call on your local Pyrene* jobber for the right Pyrenes for your hazards. Pyrene makes extinguishers for *every* fire hazard; jobbers carry various types in stock. That means you get immediate delivery, pay no freight charges from the factory. One invoice handles everything. And you deal with an established business right in your community.

New stainless steel extinguishers have been added to the seamless copper shell extinguishers in the Pyrene line. Now more than ever, it pays you to *standardize* on Pyrene—for precision workmanship, real dependability, greatest dollar value. Write for name of your local Pyrene jobber.

*T.M. Reg. U.S. Pat. Off.

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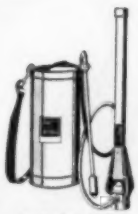
New stainless steel shell—new low price. No annual recharging; no acid dangers. For fires in wood, paper, textiles. 2½ gal. size.

VAPORIZING LIQUID

The all-purpose extinguisher effective on almost every kind of fire. Safe on electrical fires, too. 1 qt. and 1½ qt. pump types; 2 qt. and 1 gal. pressure-operated types.



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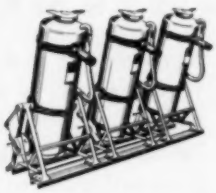
Couple playpipe to hose line. Every 19 gals. of water and 1 gal. of PYRENE Foam Compound yield 350 gals. of foam! For flammable liquids and ordinary combustibles.



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Complete fire-fighting systems, using chemical foam or air foam. For storage tanks, dip tanks, loading racks, etc.

ALSO CHEMICAL FOAM, SODA-ACID, PUMP TANK AND OTHER EXTINGUISHERS

Pyrene FIRE EXTINGUISHERS

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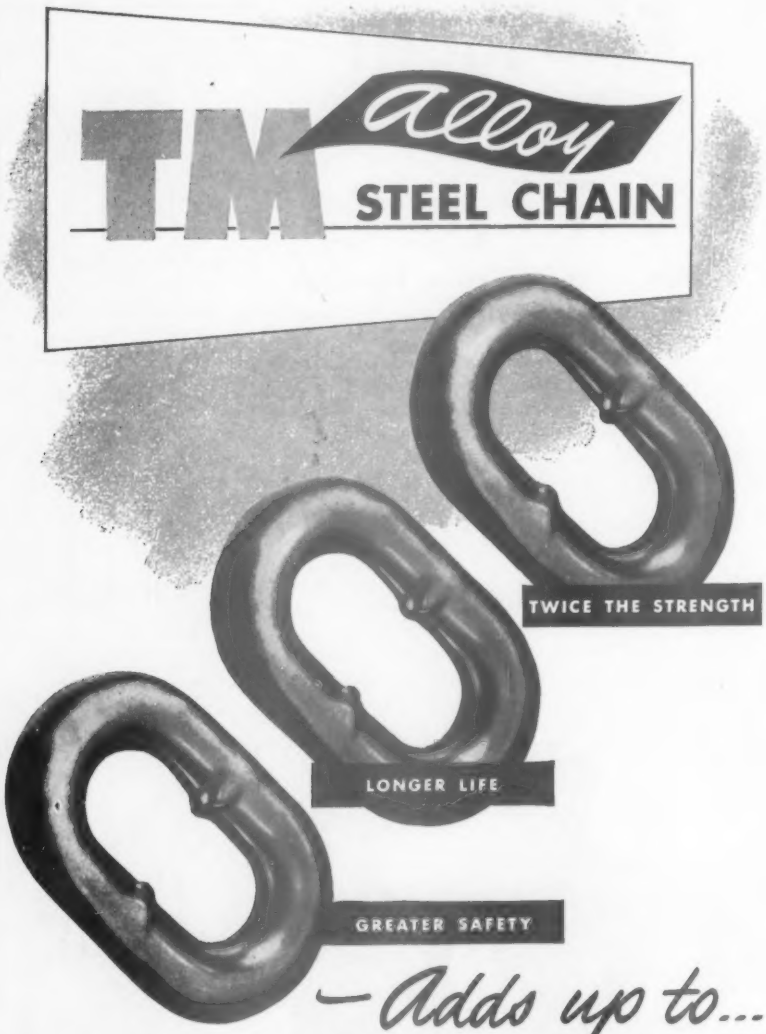

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Lower Chain Costs!

Reverse rising chain costs with TM Alloy Steel Chain. It's super safe. It *stays on the job five to fifteen times longer*—has twice the tensile strength of wrought iron chain. TM Alloy Steel Chain is completely heat-treated for link to link uniformity. Extreme toughness and great resistance to shock, grain growth and work-hardness eliminate periodic annealing costs. Call your mill supply distributor today for more details or write Dept. 7 for Bulletin 12A.

S. G. TAYLOR CHAIN COMPANY
HAMMOND, INDIANA

This Registration Ring bears the chain's serial number. It's your assurance of thorough testing and inspection before shipment.

TAYLOR MADE
A GREAT NAME IN
Chain SINCE 1873

year for plants operating their contest year without a disabling injury.

In 1950 the du Pont Company was awarded the National Safety Council's Certificate of Achievement for Distinguished Service to Safety for the year 1949—the eighth consecutive award—and was presented with a Seven Star "S" Pennant, symbolic of this achievement on the October 10, 1950, du Pont Cavalcade of America radio program.

Plant Safety Committees are the best means for securing employees' cooperation, carrying out company safety policies, educating the employees in safe practices and sustaining their interest in safety.

To the extent each member of the plant staff is responsible for plant operations to that same extent is he or she also responsible for the safety of such operations. The manager is responsible for the safety of all plant employees. When a department head is given a job, the safety of every employee goes with it. Each foreman or group leader is responsible for the employees he supervises. Even the individual workman has the responsibility of doing his job safely.

It must be obvious that the major responsibility for establishing and maintaining a good plant or operation safety record is delegated to supervision, for unless all safety devices are in place, in good repair and functioning as they should; necessary personal protective equipment is available, in good condition, and the employees know how and when to use such equipment; and unless the employees know how to work safely, injuries are likely to occur.

Mine, Ship and Mill

(From page 27)

ladies," "boudoir art," etc., etc. But the cynicism and the ribaldry didn't last. There was a marked improvement in morale. Productivity increased. Men who previously had been lukewarm to good housekeeping began to notice the bad effects of disorder. The bright colors made such a contrast to dirt and mess that made the men themselves housekeeping-conscious.

Callahan doesn't claim to be a pioneer in this color work. J & L's wire rope plant at Muncy, Pa., did a similar job before he did. Corporation safety men saw to it that the word about Muncy was spread through the company, and Callahan was simply one of the first to learn from their experience and to apply the idea, with improvements, to his own department.

In at least one other respect, Callahan shows an original approach to management problems, and J & L shows a receptivity to original ideas. Like every other superintendent, Callahan had some serious personality problem cases among his men — the kind that their fellow workers found hard to work with. Bad temper, discontent, sloppy work—all the negative symptoms were there.

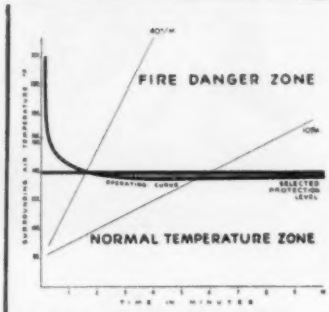
Callahan, as a good production man, has a profound dislike of spoilage—whether it be steel or human beings. So instead of scrapping—firing—his bad actors, he called for help on a project designed to salvage human beings.

Don Mateer, supervisor of the Safety and Welfare Department of Pittsburgh Works was consulted. The men were sent singly, on company time, for personal interviews to see what was bothering them. Mateer talked sympathetically and patiently—and got precisely nowhere in the early interviews. The ill-will and the suspicions were deep, and no simple pious gestures could dig them out.

But Mateer and Callahan persisted. In time the men began to talk. When they had gotten their gripes off their chest and found they still had a sympathetic listener, they told Mateer about themselves. In time the shape of their deep personal problems was revealed—the common but tragic stories of home friction, financial problems, insecurity, bad health. With this information, Mateer's department could go to work, giving direct assistance and counsel. And there came a time when Callahan could go to the other men in the shop, explain the situation in general terms, ask for their cooperation in wiping out the memory of past irritations, and call on

NOW...the most sensitive fire detector adds eye appeal

NEW FENWAL DETECT-A-FIRE horizontal model combines smart design with full protection for ordinary locations. Its temperature range extends to 325°F for release (type 20) application, and alarm (type 21) application.



POSITIVE RESPONSE of Fenwal DETECT-A-FIRE unit leaves no unprotected zone, eliminates false alarming.

No longer do you have to sacrifice protection or tolerate false-alarming in locations where appearance counts. The unobtrusive, functional design of the new DETECT-A-FIRE horizontal unit blends readily with any decorative styling. Yet look at the protection it gives. Unlike fixed temperature detectors, there is no unprotected zone. Unlike rate-of-rise detectors, there are no false alarms or missed alarms. DETECT-A-FIRE horizontal units come in alarm and release types with temperature settings up to 325° F. To get complete details, use the coupon below.

Same exclusive operating principle of types 10 and 11

The positive response and full protection of all Fenwal DETECT-A-FIRE types come from a unique operating principle. The activating element is the *single-metal* temperature-sensitive shell. In direct contact with the air, it reacts without thermal lag. Approved by Factory Mutual Laboratories and the U. S. Coast Guard, listed by Underwriters' Laboratories, Inc.

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DETECT-A-FIRE

combines Fixed-Temperature Response with Rate-of-Rise Compensation for Instant Alarm

SENSITIVE...*but only to heat*

GET ALL THE FACTS about the new Fenwal DETECT-A-FIRE horizontal unit for ordinary institutional, commercial, industrial and marine locations. Mail the coupon today.

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FENWAL, INCORPORATED, 1311 Pleasant Street, Ashland, Massachusetts,
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Temperature Control Engineers

cat nap's unaffected... his plant's protected

Here's real peace of mind! He knows that fire from a short circuit, a stray spark, a forgotten cigarette or spontaneous combustion can't destroy his investment in materials, equipment and buildings. His plant is protected with modern, approved C-O-TWO Fire Protection Equipment.

For instance, with a C-O-TWO Combination Smoke Detecting and Fire Extinguishing System you have a 24 hour a day automatic fire watchman. The first whiff of smoke in a protected area sounds an alarm. Then fast, clean, non-damaging, non-conducting carbon dioxide blankets the fire, putting it out in seconds, before it spreads and causes extensive damage . . . no lingering odors, no water damage with carbon dioxide.

There are areas in your plant that particularly need C-O-TWO fast, positive fire protection: record vaults, store rooms, spray booths, dip tanks, solvent baths, electrical equipment enclosures, lift trucks, pump rooms, especially anywhere there's danger of flammable liquid or electrical fires. The longer you wait to adequately protect these fire hazardous areas, the greater are the chances of a costly fire cutting into your profits.

Whatever your fire protection problem, let an expert C-O-TWO Fire Protection Engineer help you in planning complete and up-to-date fire protection facilities now. Write us today . . . tell us about your particular fire hazards, our experience is at your disposal . . . no obligation of course.

C-O-TWO

C-O-TWO FIRE EQUIPMENT COMPANY

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Sales and Service in the Principal Cities of United States and Canada

Affiliated with Pyrene Manufacturing Company

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

them to help the troubled men to adjust themselves in the shop.

For this successful job of human salvage, Callahan has received credit from his superiors, has seen morale, production and safety improve. But his principal reward, it is obvious when you talk to him, is the tremendous satisfaction he feels because he helped human beings out of situations that were threats to their whole status as self-respecting citizens.

I'm coming back to Mateer in another connection, but I want to mention one other Pittsburgh Works department for its work on housekeeping and color. This is the power plant, which not too long ago was a dingy, dusty place. Today it, like the cold-finishing department, gleams with color scientifically selected to provide light, to point out hazards, to create a pleasant working atmosphere.

Down the Ohio a few miles from Pittsburgh, the Aliquippa works of J & L sprawls along the water's edge. It, like Pittsburgh works, is full of the dramatic and spectacular scenes—the flaming Bessemers, the racing serpents of glowing steel in the rolling mills.

But the most dramatic part of the story there for me was in the tin plate mill. The superintendent, R. P. Powell, was out on the day of my visit, but we got his viewpoint from J. R. Davey, assistant superintendent.

If Callahan looked like he belonged in a bank, Davey looked like a young account executive in an advertising agency.

Davey put his (and his boss's) basic philosophy this way: "When I was a kid, I often brought the old man's lunch to the mill. I was afraid of the mill then, and I'm still afraid of it. That sheet goes through the tandem mill at 70 miles an hour—and it's got an edge like a razor. The cranes sling coils overhead that weigh fifteen tons. The trucks are forever shunting their heavy loads across the floor.

"I think everybody's really

afraid of the mill. But to cover that fear, some of the men try to act cocky and take needless chances to show they're tough. Not me. I'm scared every minute I'm on the floor."

Fear, to Davey and Powell, is not a negative thing. It is an incentive to action. At the end of the tandem mill today stands a guard that would make a respectable summer cottage. Guarding the tally desks on the floor against trucks and crane loads are frames of heavy steel tubing I couldn't span with my two hands. Color is used in only slightly less dramatic fashion than we saw in the cold-finishing department, aisleways are marked clearly and observed scrupulously. There is room to work, and a collective will to make the housekeeping good.

As Davey talks, you see that safety is much more than these material steps in this tin plate mill.

For example, the main employee entrance to the tin mill is shown in an accompanying photograph, but it did not always have those railings. It was possible for incoming workers to cut between piles of mill rolls and coils of tin plate and directly into the next aisleway, which carried heavy truck traffic. Since the pedestrians' and truckers' view was obstructed by piled material, some near accidents resulted, and management posted signs telling employees not to take the short cut.

The first installment of this article, published in the December NEWS, carried a statement by Admiral Moreell that savings through accident reductions would be used for improving welfare and hospital facilities in communities in which the corporation operates.

Since this article was written, J & L have announced that $69,050 in "safety savings" has been made available. This amount will be distributed among 26 communities.

One day Davey saw a trucker high-tailing through the mill at an excessive speed. He flagged the man down and took him to his office for a grade-A bawling out. "You should be terminated," Davey said solemnly. "You've endangered your fellow workers, in spite of all the instruction and warnings you've been given. But we're not going to let you go. We're taking you off that truck, and assigning you as a laborer for ten days. And every one of those days, I want you to turn in one good safety suggestion. Then we'll see about giving you your old job back."

Davey admits to a little pride in his advances and progressive approach to this case—a pride that lasted just five seconds. For the trucker's response was, "O.K., boss. But what happened to the safety suggestion I've already made?"

It developed that the man had almost hit pedestrians taking the short cut from the entrance through the piled material. He had suggested railings to prevent this

NEW FENDALL FACE SHIELDS

Greater Comfort . . . Positive Protection

Here is facial protection at its best. Easy to wear. Simple to adjust. Scientifically designed to provide absolute comfort. Headgear parts are cut on a radius to conform to shape of head; eliminates annoying break-in. Exclusive non-slip head-size adjustment assures perfect fit instantly. Windows are equipped with snap fasteners for easy removal. Available with clear or green windows, or wire screen, in a wide range of sizes to meet all facial protection requirements.

No. 1. Type Headgear, with overhead brow guard or spark deflector.

No. 2. Type Headgear with open top for ventilation on hot jobs.

Fendall Face Shields are quality made, yet their cost is surprisingly low. They pay for themselves quickly . . . then pay you. Write for complete details and prices, NOW!

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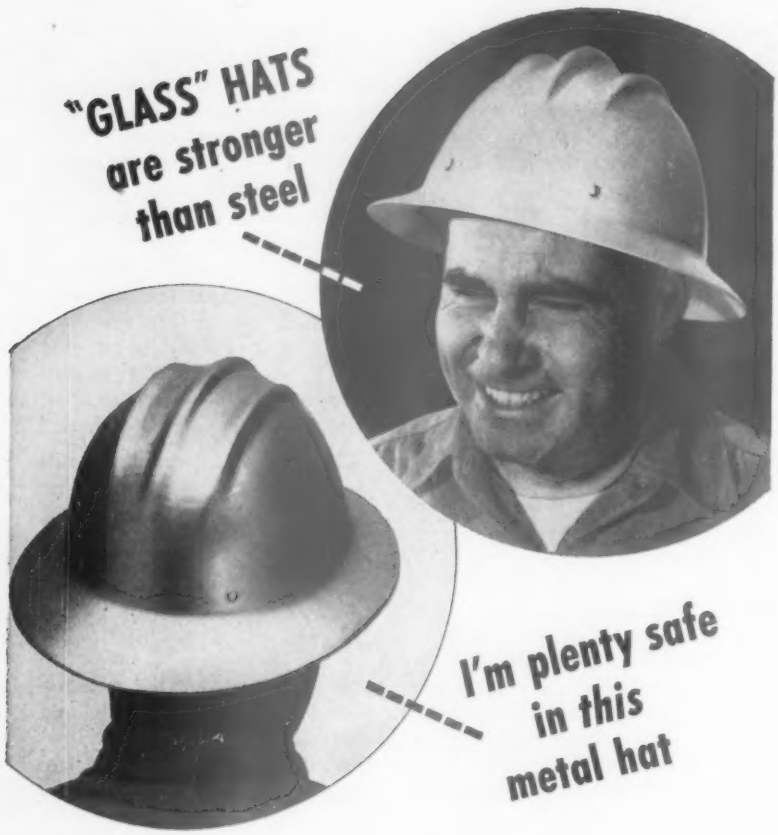

Glass or Metal...

HARD BOILED* HAT

protection can't be beat

Now you can get the famous Bullard shock-absorbing safety hat design in either molded Fiberglas or special alloy aluminum. Unique ribbed crown is the safest ever built. Greatest protection; light weight; easiest to wear on any job.

"Glass" ***Hard Boiled*** **Hats are available in solid molded colors and white—even a glow-in-the-dark model; passes all tests for electrical shock resistance; impact resistance; is water- and flame-resistant.**

Aluminum ***Hard Boiled*** **Hats are handsomely finished in satin-like natural metal.** ***Passes standard drop*** **tests; safe to wear where electrical shock is no hazard.**

Keep your men better dressed; safer, *cooler* and more comfortable with Hard Boiled Hats.

Simplify stock problems; one size fits all heads; instantly adjustable. Six-second hammock - sweatband change. Chin straps, lamp brackets and winter liner available.

Write for circular and prices

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practice. And somehow the suggestion had been sidetracked.

Davey was on the phone immediately calling his maintenance foreman. The job of installing the suggested railings was given top priority.

Powell and Davey, it seems to me, are walking proof that Christian humility is a powerful asset in industrial management. They can admit fear. They are willing to learn safety from subordinates, even when those subordinates are themselves in violation of safety regulations.

It is a humility reflected in the sign shown in the entrance photograph, with the wording "J & L Tin Plate Dept. has worked *only* so many days and months since the last lost time injury."

I want to turn now to the professional safety personnel of the corporation and the two mills I visited.

The supervisor of safety for J & L is Frank W. Kelsey, a company veteran and former safety supervisor of the Aliquippa Works. He is strictly a staff officer, responsible for advising corporation headquarters, for the developing of plans and programs, for the dissemination of accident prevention information, for the compilation of accident records, for inspections of J & L operations, and for consultation and advice to plant managements and the safety personnel reporting to those managements.

In only one situation does Kelsey move into a plant situation as a representative of corporate authority instead of as an advisor. That is on the occasion of a fatal or unusually severe accident.

Such an accident calls for the convening within 48 hours of a board of inquiry with Kelsey as chairman and with the plant assistant general superintendent, his supervisor, and a local union representative from the joint safety committee as other members of the board. The inquiries are rigorous and exhaustive, the reports factual and pointed. And these reports go promptly to the desks of the corporation's top executives, including Admiral Ben Moreell, the president.

Chief safety man at the Pittsburgh Works is Don Mateer, while

Earl Houck is in charge of safety at Aliquippa. These men operate programs closely modeled on the program developed by Kelsey, though differing in details.

There are regular safety meetings by the mill superintendent with his department heads to set policy, followed up by meetings of foremen in each department and workers' group meetings conducted by foremen. Regular training sessions on safety for foremen are also held. The program outlines a series of inspections, follow-up, checking on safe working conditions and safety equipment, on housekeeping. The program also provides for fire prevention and first aid activities, as well as accident investigation and the maintenance of accident records.

Neither Aliquippa nor Pittsburgh Works was the leading J & L works in safety standing at the time of my visit. That position goes to Otis Works in Cleveland—which, unfortunately, was not on my itinerary.

Obviously, Jones & Laughlin's excellent safety record of today is a product, primarily, of a sound program being executed thoroughly and conscientiously. But the key to the future progress in accident prevention in this corporation, it seems to me, is the top management attitude that gives men like Callahan, Powell and Davey a free hand to experiment with increased safety emphasis and with new approaches to the problems which they face.

Perhaps it is fair to give major credit for that attitude to that most unconventional and effective admiral-turned-businessman, whose name appears on every award of honor to J & L plants with good safety records, Ben Moreell.

Safer Lifts

(From page 35)

which formerly had been used and still have a superior factor of safety.

Then, since alloy steel chain is practically free from the effects of work-hardness, the necessity of periodic normalizing was obviated, since there was no grain growth to eliminate or strains to relieve. Alloy steel chain is heat-treated, so

the most important Question about Chain:

WHO MAKES IT?...

Whether you buy chain for your own use or as part of your product, you want to know that it is good, strong, dependable, high quality chain. And the best way to be sure of that is to know who made it.

Nothing will ever lower the quality of ACCO Welded Chain, Weldless Chain, or Attachments. Our research department is constantly endeavoring to improve the quality of American Chain, thereby increasing its service to the user.

Buy AMERICAN
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York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION
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In Business for Your Safety

Watch Out!
SHE MEANS TROUBLE-

UNLESS SHE IS EQUIPPED WITH ADEQUATE HAIR PROTECTION!

Loose hair can be a dangerous thing around moving machinery. The dangers can be reduced to a minimum by the use of HOLLYWOOD TURBANS OR CAPS. With the use of these caps and turbans, loose hair is neatly bound, and kept away from danger areas. Here is just one of many styles.

HOLLYWOOD "ORIGINAL"

It is an ideal all-purpose turban. It protects the hair from dirt as well as machinery. Adjustable to any head size by a simple twist in the back. Washable, it comes in many different colors, individually packed in glassine envelopes. ***Caps or any other hair protection made to your own specifications.***

WRITE for complete circular showing the various styles.

HOLLYWOOD *TURBAN PRODUCTS COMPANY*
1104 S. WABASH AVE. CHICAGO 5, ILL.

its qualities can be varied according to the use to which it is to be put when in service. The hardness of this grade of chain can be varied but, in order to maintain the greatest possible tensile strength without sacrificing all-important ductility, the correct hardness for each alloy steel employed could be determined by experimentation and varied in particular cases.

Furthermore, the hardness which an alloy steel chain acquired through heat treatment was constant throughout each link, so that when the surface of a link became worn at a section, such as at the bearing points, the wear at these points did not become accelerated as would be the case in a carburized or case-hardened link of chain where the hardened section of each link constituted only a very thin outer layer.

With the use of alloy steels in chain, it became possible also to use attachments made from steel of the same analysis as the chain. This permitted that these attachments be heat-treated with the chain, thus constituting a more homogeneous assembly than was possible with either low-carbon steel or wrought iron chain. Because of this homogeneity, one could expect the same performance from the hooks, end links or center links of a heat-treated alloy steel chain as from the chain itself and a hardness which would be within a very few points of the hardness of the chain links themselves.

The hardness of each lot of alloy chain that received heat treatment could be determined by passing through the same heat treatment a single link or links of the same analysis alloy steel which could be tested for hardness after passing through the heat treating cycle.

The techniques developed in welding the various alloy steels employed in manufacturing chain necessarily varied according to the problems confronting each manufacturer, but it is quite certain that these techniques were all well suited to the type and analysis of the steel used. They could be much more easily controlled than could the process of hand-forging the wrought iron links which comprised the so-called dredge iron sling chains because of the fact

that automatic or semi-automatic welding processes do not admit variations of the human element as in hand-forging.

When it becomes necessary that an alloy steel sling chain be repaired, the fact that the entire chain, including the new parts or attachments, can be run through the entire heat treating cycle, appears to be another advantage of this type of chain when compared with wrought iron or low-carbon steel chain. A complete heat treatment restores the entire chain to a condition quite the same as when manufactured. When it has been proof-tested and re-inspected, it may be said to have actually regained its youth.

Elongation

Elongation of alloy steel chain is quite as satisfactory as that of the best grade of wrought iron chain and in many cases exceeds the 15 per cent required by most chain specifications, such as the ASTM. If it is desired that a special length or lengths of alloy steel chain have a greater ductility than it would normally have, a relatively slight variation in the heat treatment will produce this greater ductility. The same is true when an alloy chain of greater than usual hardness is desired.

Of course, in the first instance, there is a certain sacrifice of tensile strength necessary to attain the greater ductility, and in the second instance, ductility will be somewhat less than the standard, but neither variation is so great that the chain will not still perform its functions as a lifting medium deserving of confidence and still retain its special qualifications for the job it is to do.

Some friends with considerable experience have told me that they consider the correct and careful maintenance of sling chains one of the factors which contribute most to the longer useful life of equipment. Good housekeeping in any plant should be extended to to include sling chains. They should have definite procedures for stowing chains so that they do not become unduly affected by rusting or by being subjected to corroding substances such as acids, when not in use. This can

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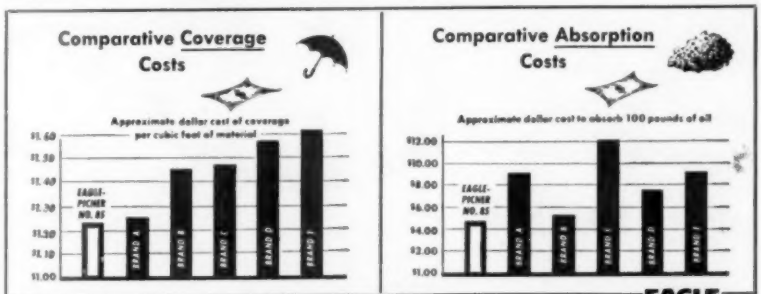

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these slings can be correctly an-

be accomplished by providing racks on which chains not in use can be placed. This also facilitates inspection and keeping track of all chains.

If a sling chain is allowed to lie on the ground or floor, it almost always becomes oxidized or covered with dirt which accelerates abrasion when it is again put into use. Every chain should be marked, not only with its safe working load, but also with some identification showing when it was purchased or to which department it belongs. This marking should be on a ring attached to a joiner link, for example, so that the chain and its component parts will not be damaged by deep stamping marks which might cause progressive failure at the affected points.

Protecting sling chains by a coating of grease or heavy oil to prevent rust is an excellent procedure, providing that the coating does not interfere with the safe handling of the chain when in use and that the greasy coating does not serve to accumulate abrasive material which accelerate wear at the bearing points of the chain. In some plants, grease is applied only to sling chains which are not in use or which are used only for some specific purpose and are not being handled constantly.

Inspection

Inspection of all sling chains should be scheduled periodically and performed by a competent individual having full authority to remove from service any chain that appears to have defects which might result in failure in service. All defective sling chains should be tagged if it is not possible for the chain inspector to remove them at the actual time of the inspection and should be collected as soon as possible after being tagged as defective and sent to the manufacturer for reconditioning. If these chains are not expeditiously removed from the places where they have been in use, they may again be put into service and eventually will be in such damaged condition that they will fail in use.

Sling chain reconditioning service is maintained by the chain manufacturer and is a very important part of the maintenance procedure. This service includes thorough inspection prior to the estimate of the cost of repair which is sent to the chain user. Then all defective parts of the chain and its attachments are removed and replaced with new links, new hooks, new end or center links, etc. The sling is then heat-treated, if it is an alloy steel sling chain; if not, it is annealed, proof-tested and again inspected. In this manner, the sling chain acquires a new lease on life and is ready for more service.

There are many plants where a procedure has been set up to repair the sling chains used in that plant. Sometimes this is very efficiently done and the results are entirely satisfactory. It should be remembered, however, that to efficiently and effectively repair sling chains, certain equipment should be available. If the chains are of wrought iron, there should be a controlled furnace in which

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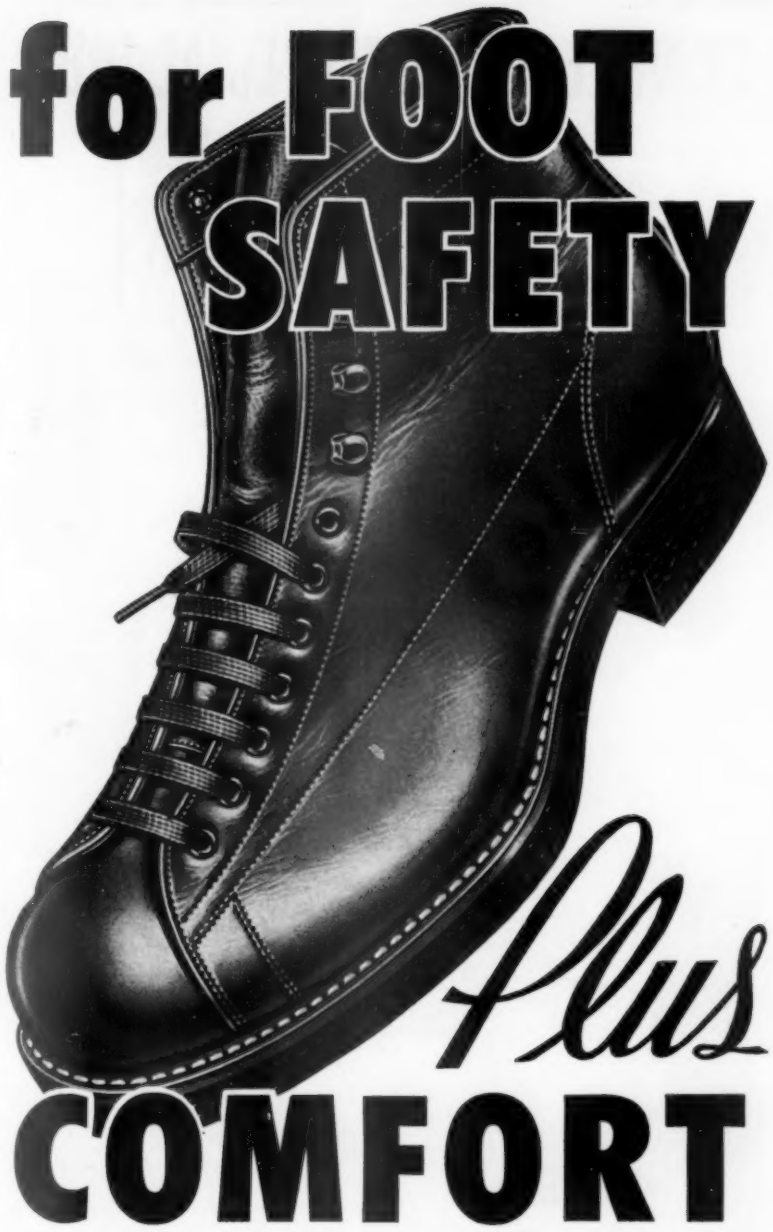
these slings can be correctly annealed—not simply thrown into some sort of fire or a cope and allowed to lie there until someone remembers to remove them. This sort of annealing invariably results in some sling chains or some part of a chain being over-annealed to the point where the yield point is irretrievably lowered and the links at some portion of the chain being almost melted together while other parts do not receive enough heat.

The success some plants have had with careless methods in annealing sling chains is rather amazing. In spite of this, haphazard annealing is not recommended. If wrought iron chains are repaired by the plant blacksmith by having new sections of chain spliced into them or by having new rings or end links attached to them, there should be some way of proof-testing the chain after it has been repaired. This can be done by lifting test loads as nearly equal to the established proof test for the size of chain concerned as possible.

Welding Chains

In the case of alloy steel sling chains, plant repairs can also be effected, but in this case also, certain equipment must be available. The welding of alloy steel repair links should be done by one of several approved processes by a welder having experience with the alloy steel concerned. After an alloy steel repair link has been welded, it should be heat-treated so that it will not remain weaker than the other parts of the chain. If heat-treating facilities are not available in the plant, it is possible to use repair links of larger diameter material to compensate for the fact that they have not been heat-treated.

When it is necessary to replace joiner links in an alloy steel sling chain, these joiner links, as well as end links or end rings or hooks should be secured from the manufacturer so that it is certain that they will be of the same analysis alloy steel as the original chain. As in the case of wrought iron chains, there should be available some means of proof-testing each sling chain after the repairs so



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that any weakness in the repair links can be detected before the chain is put back into service.

In repairing sling chains in a plant where they are used, too much stress cannot be placed on the necessity of extreme care. This is true particularly of the actual welding process. A certain length of time must be devoted to each welding of each repair link. By exerting such care and by using repair parts of the correct analysis alloy steel, by heat treating the repaired sling chain and by proof-testing before placing it again in service, there is no reason why complete success should not result.

If the maintenance department decides that it would be more satisfactory to repair sling chains in their shops rather than return them to the manufacturer for repairing, it is often possible for this plant to send individuals, such as welders, to the plant of the chain manufacturer so that they may observe the welding procedures as well as the proof-testing and heat-treating procedures and so be able more easily to reproduce these procedures in their own shops.

The safe and unsafe rigging of loads is a subject capable of many discussions. There are scarcely two plants which have the same approach to the same problem. Experience is the greatest teacher in matters of this sort. There are a great many methods of rigging loads, however, which are generally accepted as definitely unsafe. This is true, even though some plants have employed them for years with no mishaps. A short list of the most obvious of these practices would not be amiss here.

First, it is generally conceded that knotting or twisting of the branches of a sling chain so as to have each such branch of equal length is extremely hazardous. Any such knotting or twisting, because of the nature and form of the links of a sling chain, cannot be secure, and very often, when the load has been raised, one or more of the links in the twisted or knotted section of the chain tend to settle. Since this is always accompanied by a jerking which is communicated to the entire

length of the branch affected, a temporary strain is placed on the chain which increases considerably the strain which the chain must stand. In this manner, a sling chain will often fail because of the vibration from the settling of the links which have been twisted when the actual weight of the load is no more than the published safe working load. Therefore, it is not the actual weight being lifted, but the load's weight times the acceleration of the slippage that causes the overstrain on the sling chain.

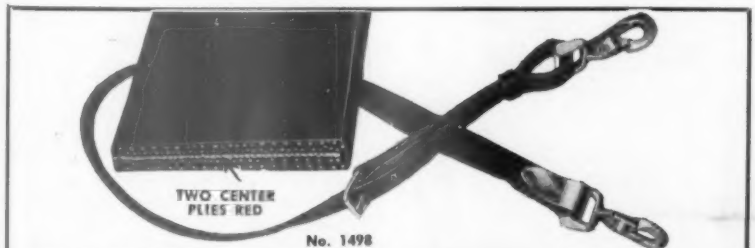
The same effect is caused by "spiking" of the branches of a sling chain to shorten them. As in the case of twisting the links of a sling, this practice not only has a tendency to distort the links of a chain, but if the spikes used slip from their places between two links, the resultant shock and vibration cause the chain to be subjected at that particular moment to two or three times the actual weight of the load.

Another dangerous practice is forcing the point of a sling hook into an opening in a load to be lifted, often by hammering the bowl of the hook until the point has been inserted into the opening. This is dangerous not only because there is very good chance that the point of the hook will not remain in the opening into which it has been forced, but also because the design of the average sling chain hook is so altered by such forcing that it no longer retains it rigidity and will continue to open out when the load is actually lifted, since the load is being carried by the point section rather than by the bowl section. As the point section is very much lighter in cross section than the bowl section, something has to give when the entire weight is suspended from the lighter rather than the heavier section.

Proper Angle Important

Another questionable practice is that of using too short a sling chain to lift too wide a load. This always results in the sling chain's being used at such a wide angle that its safe working load is very much less than if the chain were suited to the load. For example, a double sling chain which has safe working load of 20,000 lbs. when used at an angle of 60 degrees, has a safe working load of only 3,000 lbs. when the angle at which it is being used is reduced to 10 degrees. This practice very often leads to statements that such and such a sling chain failed miserably when lifting a load that was only one-half of the published safe working load, or often less.

Naturally it is nearly impossible for any plant to have so many sling chains that there will be one special sling chain with exactly the correct attachments for every load which might have to be handled, but a great deal can be done to see to it that the most appropriate sling chains are used. Loads such as foundry flasks often demand special hooks to handle them safely, either by means of fitting over handles or trunnions, and it is eventually an economy to have such special hooks made rather than to try to adapt standard sling hooks to a job for which they are not fitted and for which



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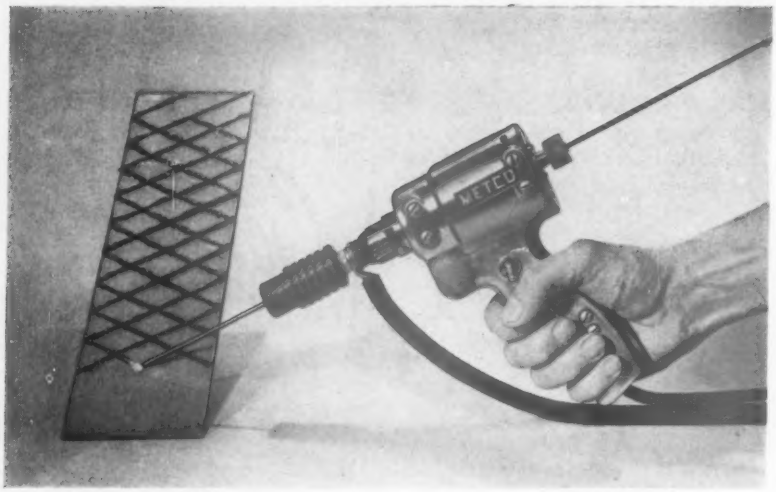

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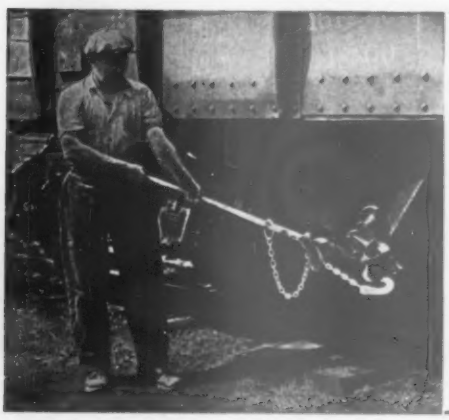

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they must be distorted to such an extent that their tensile strength is reduced to a fraction of what it would be if they were used correctly.

When a sling chain is assigned to a particular job, all factors concerned in its lifting should be given consideration. For instance, if a flask weighing ten tons is to be lifted but must be broken loose from a pit, the operation of breaking this flask loose may cause a strain which more than equals the actual weight of the flask, and the sling chains, therefore, are subjected to a load which easily may exceed their proof-test load before the load is lifted clear.

Such occurrences are part of the day's work in every foundry but a surprising number of sling chain failures are caused by using a chain which is actually too light for the job, although it is strong enough to handle the free weight of the load.

The safety committees of many plants are accomplishing very much in bringing attention to the importance of exercising care in rigging loads safely and in giving attention to the condition of lifting equipment. Periodic inspection of sling chains has avoided very many potential accidents, and the adoption of the proper sling chain for each individual lift is becoming practice rather than eccentricity. In the stress and strain of present day industry, when the cry is tonnage and more tonnage, and when production records are being broken constantly until the impossible of yesterday becomes today's standard, it is all too easy to forget that handling equipment is often doing many times more work than it was previously called upon to do. Inspection and more inspection is the answer.

Statement of the Ownership, Management, and Circulation required by the Act of Congress of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233).

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semi-weekly, and tri-weekly papers only.)

CARMAN FISH, Editor.

Sworn and subscribed before me this 5th day of October, 1950.

GEORGE D. BOLLINGER
Notary Public

(My commission expires May 18, 1952)

Georgia Fire Safety

(From page 21)

The fire marshal's staff prepared drafts of proposed regulations dealing with each type of occupancy and hazard. These drafts were submitted to special committees appointed by the advisory board chairman for further study and a public hearing. These committees consulted representatives of the businesses affected and later conducted a public hearing

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to discuss the regulation. Much valuable help was received from the various industrial and business groups in these hearings and with their aid workable regulations were created.

When the committee had reached agreement on the workability of a particular regulation a meeting of the entire advisory board was called. All interested parties were asked to attend the meetings of the board to offer their suggestions concerning the proposed regulation. In a number of cases the interested industries and business groups brought in prominent authorities at their expense to sit in on these meetings. The advice of these authorities has aided materially in the creation of sound, workable regulations.

Regulations Adopted

The first regulations adopted were the general or administrative regulations that were essential to implement the law. Following these, other regulations have been adopted as follows: (2) industrial, storage and buildings of similar occupancies, (3) mercantile occupanices, (4) hotels, (5) apartments, multi-family and rooming houses, (6) places of public assembly, (7) schools, colleges and dormitories, (8) office buildings, (9) hospitals, sanitariums and corrective institutions, (10) handling, storage and transportation of liquefied petroleum gas (11) sale, storage and transportation of explosives, (12) handling, storage and transportation of gasoline, kerosene and other flammable liquids, (13) handling, storage and transportation of anhydrous ammonia. In addition to these there are other regulations now in either draft form or in the process of being adopted.

Another feature of the Georgia Safety Fire Law and the rules and regulations thereunder is the method of securing cooperation and enforcement at the local level. If a city, town or county has an adequate inspection department the state fire marshal may deputize the chief authority of such department to act for him in the enforcement of the fire law in his home community. This feature of

the law has provided for a much broader inspection program than could be undertaken by the fire marshal's office at this time. The technical aid given the local men has resulted in generally good inspection all along the line.

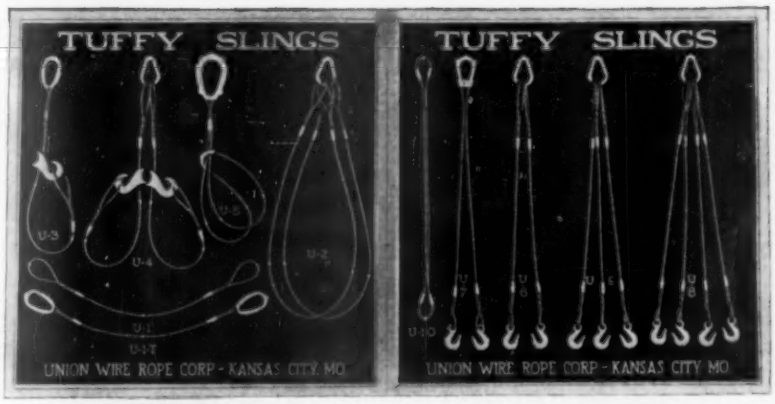
Another feature of the Georgia Fire Safety Law is that before a building owner can be held in violation of the law his property must be inspected by a representative of the fire marshal's office and the violations with suggested corrective measures must be set forth in writing. When notice of violation of the fire safety law is mailed to a property owner, a fair time limit of compliance is established. Only after the expiration of this time limit is the owner of property in violation of the law. Any person who fails to comply with directives of the state fire marshal is subject to prosecution, as well as being enjoined from further operating, maintaining or occupying a specified unsafe building.

Cooperation Keynote

Cooperation has been the keynote since the present fire safety law has been in effect. The fire marshal's office has made every effort to enlist the aid of all interested groups. The ability of the fire prevention engineers of the Southeastern Underwriters Association was well known when the advisory board was established. This group has been most helpful to the fire marshal's office and the advisory board in their various efforts.

Probably for the first time the casualty insurance safety engineers have been given an active part in the fire prevention effort. Zach D. Cravey, the safety fire commissioner, and his staff recognized that these safety engineers had a definite part to play in this program as their first concern is to save lives. The engineers of the various casualty companies, individually and through their Georgia Casualty Engineers Association, have rendered valuable aid in creating the various regulations.

Diligent effort has been put forth by the newspapers and the



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Looking for sling safety at its best? Each Tuffy Sling is tagged with its safe working load and it is proof-tested to twice its safe working load. Its patented interlaced 9 part wire fabric construction, makes possible eye splices averaging 95% of the fabric strength. Extraordinary flexibility permits tying into knots without material damage. Cutting any one of the 9 parts will not result in stranding. On every kind of load, under all kinds of pulls and with every type of hitch, Tuffy Slings have proved their superiority, universal adaptability and longer service life.

Like many others, you too can prove to your own satisfaction the money saving worth to you of any one or all of the 10 factory packaged, ready to use types.

union Wire Rope corporation

2224 Manchester Avenue Kansas City 3, Missouri

Feather-Weight Sun Lamp Goggles for Personal Use

These No. 46 LIM Smoked Green Therapeutic goggles are ideal for Health Clubs, Industrial First Aid Rooms, or in the home where health lamps are used.

The eye cups are fastened together with small round elastic to avoid leaving shadow marks. 23 m/m flat green therapeutic lenses prevent eye strain when looking directly into the sun lamp. They eliminate ultra violet and infra red rays. Packed 6 to a display carton.

No. 46 LIM with therapeutic lenses.
No. 47 LIM same style, but with lenses for beach wear.

Extremely low in cost. Order from your dealer. If interested in a quantity purchase, we will gladly mail you a sample pair for inspection purposes.

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More Than 200 Eye and Face Safeguards

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radio stations of the state to materially aid the general fire safety movement. Only through this cooperation has the public been kept informed of the progress made under the fire law. The numerous business associations have continually advised their members of the developments of new regulations.

Of prime importance in administering the fire law is the work of the public information department. This department, under the supervision of Ray McCay, is at present carrying on an unprecedented program of public information and education activities. The people of Georgia are becoming increasingly aware of the existence of the fire law and the benefits resulting from it.

In pursuing this well-rounded information program, a system has been established for frequent periodic releases of news concerning the fire marshal's office to all weekly and daily newspapers and radio stations over the state.

The fire marshals' office is going all out in the "Junior Fire Marshal" program. To promote this movement a network of 21 radio stations is utilized to broadcast a top-flight juvenile fire prevention program entitled "Junior Fire Fighters." This is in support of an extensive educational program being carried on in the schools of the state to acquaint the students with the basic principles of fire safety.

At present some 2,500 school children are serving as junior fire marshals in approximately one hundred schools in 45 counties. With the beginning of the new fall term this program of education is being intensified to introduce the school fire safety campaign in every school in the state.

Another innovation in the promotion of fire safety is the launching of a series of television shows designed to entertain, as well as inform, the young and old alike. Just as in other educational media the primary purpose is to bring about an increasing awareness of

SENSATIONAL
NEW FOAM-X
MIRACLE MAT
IT FOAMS WHEN IT WORKS
Patent Applied For
New, Improved Foam-X Conditions Sore, Tender Feet
Foam-X is an amazing, quick-acting foot conditioning application for shower room use . . . MILD and PLEASANT. A Texas manufacturer's report calls Foam-X "A Godsend for sore, blistered feet." (Full text on request).
Foam-X is UNCONDITIONALLY GUARANTEED. If two weeks of daily use of Foam-X fails to step up skin resistance to fungus attack and so stop athlete's foot, you owe us nothing. YOU TRY IT BEFORE YOU BUY!
Nothing Else Like MIRACLE MAT!
...Fill It and Forget It!
The new Foam-X Miracle Mat is the most important new development in shower room foot treatment in years.
Miracle Reservoir eliminates nuisance of daily mat refilling . . . holds almost one gallon of Foam-X solution . . . automatically feeds the sponge rubber mat as Foam-X is used. Solution in mat remains at same level always . . . not too full, not too dry, but JUST RIGHT. No more SPLASH, no WASTE, NEVER AGAIN A DRY MAT. What's more, Miracle Mat saves up to 9/10's of serviceman's work. One filling of Miracle Reservoir holds about 1500 foot treatments . . . every bather is INSURED A 100% EFFICIENT FOAM-X FOOT CONDITIONING TREATMENT . . . EVERY TIME!
Write today for our trial plan. If two weeks use of a Miracle Mat fails to make every bather in your shower room Foot-Happy, you pay nothing— . . . YOU JUDGE THE TEST.
MIRACLE RESERVOIR!
FILL IT...
FORGET IT!
HOLDS ABOUT 1500 TREATMENTS
FOAM-X SOLUTION REMAINS AT CORRECT LEVEL ALWAYS
FOAM-X COMPANY
334 W. Alamar Avenue • Santa Barbara, California
(Eastern shipping depot — Huntington, Ind.)
In Canada — Safety Supply Company — Toronto

the individual's duty in preventing fire to achieve safety of life and property.

It is the opinion of those connected with the Georgia Safety Fire Law that this sound and far-reaching educational program combined with the present effective inspection and enforcement program is resulting in a material reduction of fire hazards. The efforts made to date have resulted in considerable improvement, but the job has only started. Effectiveness of the safety fire law will increase with each succeeding year with the result of lower life and property losses due to fire.

Light at the Mine Face

(From page 25)

we found many visual tasks of extremely low contrast. It appears, therefore, that one likely avenue of investigation lies in increasing the contrast of the task. This might be feasible by frequent use of whitewash or extended use of rock dust.

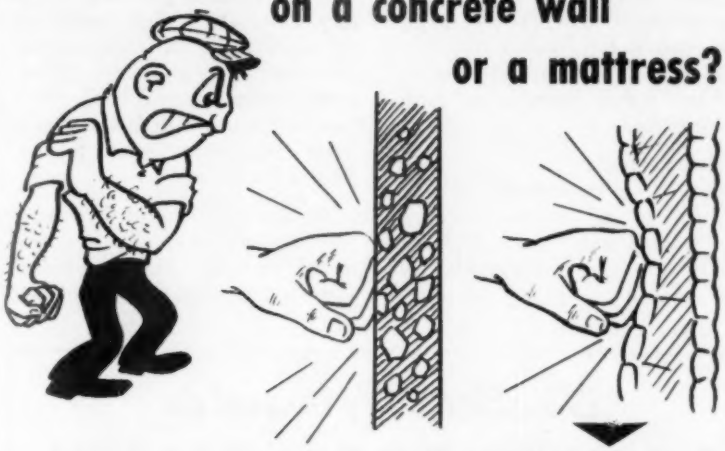
Visibility Meter

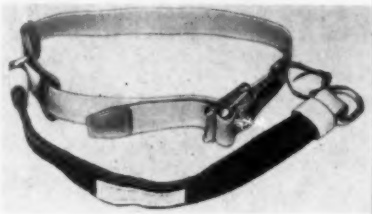
The Luckiesh-Moss Visibility Meter was developed to measure the relative visibility or visibility levels of almost all visual tasks. This meter operates on the principle of introducing a graduated absorbing and diffusing filter into the line of vision and thereby permitting vision through it to be reduced to threshold. It is only at threshold that visibility measurements can be made.

The top line of the doctor's eye chart, viewed from a specific distance under specified illumination, represents threshold for people with normal eyes. The visibility level measurements taken with the aid of this instrument have been related to relative footcandles. For instance, a visibility reading of 1 means that for that particular task, the amount of light provided was only four times threshold. In other words, were the light reduced to ¼ and the meter removed, the task would have been just at threshold.

Another example of a threshold visual task that you can try out sometime is as follows: Reading the body print of an ordinary

Would you rather land a HAYMAKER on a concrete wall or a mattress?





By elongating a very few inches (depending on amount of fall) the UNOLYN* shock absorber on Safe-Hi Construction Belts furnishes "the mattress" when a falling man hits the end of his lifeline.

No wonder Safety Engineers are saying that Safe-Hi belts are "a long stride forward in construction safety"!

*Product of Flight Safety, Wilmington, Del.

See your safety dealer or write

SPECIFY *Safe-Hi* PRODUCTS

ROSE MFG. CO.
1731 Arapahoe St., Denver, Colo.
• SAFETY BELTS • LADDER SHOES
• POLE GRIPS • WALL GRIPS • CHISEL GRIPS
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SAFETY CENTER

NATIONAL SAFETY SERVICE
Complying with all Safety Codes
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NATIONAL SERVICE

POWER PRESSES — WOOD WORKING MACHINES GRINDING OPERATIONS AND UNDER-FOOT

DUST COLLECTORS, MAGNIFIERS for INSPECTION FIRST AID EQUIPMENT

The Surty Mfg. Co., Inc. 4139 W. KINZIE ST., CHICAGO 24

newspaper illuminated to .01 footcandles (equivalent to the illumination provided by a half-moon on a clear night) would be a threshold task for people with normal eyes. If this were illuminated by two full moons, it would have a visibility level of 1.

I am speaking not of the headlines but of the normal type used in the body of the page. We have a reading room in our Lighting Institute at Nela Park where people can read a newspaper and select the desired amount of light by means of a selector switch. Considerable range is provided. After they have made their selection, the amount of light falling on the newspaper is measured. Most people select around 200 footcandles for this visual task which would be roughly equal to the light of 10,000 moons.

To obtain facts rather than mere opinions, several of my associates and I took this visibility meter with us to mine faces and attempted to measure visibility levels with whatever lighting they were using. We hope that we and others can obtain additional data. I should like, however, to review some of the results.

In most instances only cap lamps were operating; machine lights were out. We stood next to the miner and with the aid of his lamp obtained readings on a few typical tasks. Visibility levels measured in a number of instances were low. They varied from about 1 to a maximum of 3. In some instances the source of light was the same cap lamp. The answer to this could only be that the characteristics of the visual tasks were different; the contrast, size of object, reflection, etc.

In cooperation with the Bureau of Mines and others we recently tried to obtain the differences in visibility level between a few typical tasks before and after the face, roof, ribs and floor were whitened by whitewashing or application of white rock dust. Some of the results are shown in the illustrations on pages 24 and 25.

Big Step Forward in

SHOWER ROOM SAFETY

ATHLETE'S FOOT PREVENTION

Old way . . .

In the past, blame for Athlete's Foot was placed solely upon Athlete's Foot fungi.

SO . . .

Preventive methods consisted of attempts to kill the fungi or to prevent exposure to them.

BUT . . .

Skin specialists discovered that fungi are everywhere. You cannot kill them all, nor can you avoid exposure to them.

The real cause of Athlete's Foot, they found, is a weakened skin that allows the fungi to grow. Attempts to disinfect the feet may weaken the skin still further.*

New way . . .

Today, blame for Athlete's Foot is placed squarely upon a weakened skin.*

SO . . .

The new method is to toughen the skin and increase its resistance to fungus attack.

THAT IS WHAT ŌNOX DOES

Instead of disinfecting the feet, Onox mineral salts toughen the skin and make it resistant to fungus attack.

Onox is used in a sponge rubber foot mat. There is no splash, no mess, no waste. Nothing to get out of order. And the men like to use the mats.

Today, over 70% of the largest industrial companies in the country use ŌNOX

*Archives of Dermatology and Syphilology, April, 1942.

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WAREHOUSES: BROOKLYN, CLEVELAND, NEW ORLEANS, LOS ANGELES

SIMPLIFY YOUR GAS MASK EQUIPMENT WITH THE *NEW* ACME 3-IN-1 FACE PIECE

Now — you can have chin-style, chest-style or hose-mask protection with ONE Acme No. 6 Face Piece.

This new Acme development makes it possible for workers to use any type of protection the job requires — without an extra face piece for each type of equipment.

New descriptive bulletin tells complete story on advantages provided by Acme No. 6 Full-Vision Face Piece. Write for it today.

ACME PROTECTION EQUIPMENT COMPANY
3037 West Lake Street Chicago 12, Illinois

The full significance of making these areas white was not brought out by the meager visibility measurements. It was quite apparent that "seeing" in general was far superior in the whitened rooms. The atmosphere or feeling was similarly much better.

Dust Control

One of the mines visited was a low-seam dry mine with trackless equipment. Upon returning to the hotel, I was informed that the owner of the mine was expecting me to make a recommendation.

It was quite apparent that there was only one recommendation I could make. It would be futile to attempt any lighting with the terrific dust present. I knew the small loader I crouched beside was supposed to have headlights. I had to dig away 1½ inches of dust before I came to the headlight lens. Obviously the bulbs behind the lenses were out. I observed on this occasion and others that some type or size of coal dust seems to have a considerable retrodirective effect. It seems to act like a reflector sign returning a considerable amount of light directly to the source. Since the source is located close to the eyes, a veiling glare is introduced. When I removed the cap lamp from my cap and held it down on my chest I could see much better, though I did not attempt a visibility measurement under this condition.

A later observation when some very fine dust was tossed into the air did not show a pronounced retrodirective effect, though naturally as the dust increased sufficiently, the object became invisible. Bureau of Mines Technical Paper No. 593 deals with *Allaying Dust in Bituminous Coal Mines with Water*. It contains much information on methods of providing water and the reduction of dust achieved. I would rate the allaying of dust as a No. 1 problem in improving "seeing" in the mine.

The Bureau of Mines has made good recommendations on controlling dust. You could extend rock dusting using a white dust at

Safety and Service Emblems

Fewer accidents mean more manpower. Safety Emblems for various lengths of "no lost time" service instill the competitive spirit necessary for employee cooperation.

Service Award Emblems for 1, 3, 5, 10, 25 and 50 years of continued employment increase loyalty and reduce labor turn-over.

Easily seen and readily recognized emblems such as those illustrated above are paying big dividends in many large plants. Also Identification Badges, Plaques, Athletic Medals, Trophies, etc.

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METAL ARTS CO., Inc.
Dept. 10, Rochester 5, N. Y.

You Cut *More than* Accident Costs with FERALUN*

Feet won't slip on Feralun – they won't wear it out, either. That's why Feralun, approved by insurance companies for underfoot safety, has for years been the accepted standard for heavy duty safety treads not only in industry but in every type of public and private building.

● Made of cast iron with wear-resistant particles embedded in the walking surface. Feralun gives feet—even when wet or oily—a safe, sure "grip." And Feralun wears like the iron it is. Available as full treads, nosing or floor plates, Feralun can be installed on any stairway and is adapted equally to new or repair installations.

● Slips do count. In fact about 20% of all compensation claims result from accidents due to slips and falls. Maintenance counts, too; and the wear and tear on platforms and stairways can be an appreciable part of plant upkeep. You cut both of these costs with Feralun.

*REG. U. S. PAT. OFF.

For full information send coupon today

AMERICAN ABRASIVE METALS CO.
460 Coit Street • Irvington, N. J.

American Abrasive Metals Co. (NSN 11-50)
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Please send me full information on "Feralun" treads and plates.

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LIFTING
CLAMPS
THE HEAVIER THE LOAD
THE TIGHTER THE GRIP!
Safer and Speedier Lifting at Less Cost... have made MERRILL Volz LIFTING CLAMPS the choice of large Steel Mills everywhere.
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• Safety factor of 5 to 1.
• Factory tested at double rated capacity.
GREATER SPEED AT LESS COST
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• Working parts entirely enclosed.
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Available in Stainless Steel
Sold by Better Distributors Everywhere.
MERRILL BROTHERS
56-28 Arnold Ave., Maspeth, N.Y.
Producers of DROP FORGED SHACKLES, CLEVIS NUTS, TURN-BUCKLES & EYE BOLTS

least to the face and no doubt experiment with whitewashing, using present air compressors to operate whitewash guns. Many mines could benefit from the purchase of modern, high-powered cap lamps and at least locomotives could be equipped with the new improved high-powered headlight lamps of the sealed beam type.

Grounding of Portable Electric Equipment

(From page 29)

depth reached only by driven electrodes.

15. Pipes, rods of iron or steel, or nonferrous materials or alloys (e.g., "copper-weld") can be used for electrodes. They must conform in diameter to the requirements of the National Electrical Code. They should have a clean metal surface, and should be *driven to a depth of at least 8 feet,* regardless of the size or number of electrodes used.

16. Where rock bottom is encountered at less than 4 feet, the electrodes should be buried in a horizontal trench.

PLANT SAFETY

Our helpful booklet *"Safety as it Applies to Supervisors"* is being used today by many progressive companies in their safety education programs. It is planned and produced by Marsh & McLennan's nation-wide staff of engineers. Write for your free copy today.

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NON-SKID SAFETY

SHOCK ABSORBING

LONGER WEAR

The Triple Safety Heel was designed to minimize foot slipping accidents. It has a tread design of circular ribs with connecting cross bars that causes suction. In walking it gives road contact of one inch, where ordinary heels contact only on the edge. Laboratory tests show Triple Safety Heel has 97% road contact and traction.

Design permits rubber to flex, absorbing body shocks, minimizing fatigue. Triple Safety Heels will give longer wear and reduce slipping accidents on wet or slippery floors.

WRITE FOR CIRCULAR

TRIPLE SAFETY HEEL CO.
2149 Leland Avenue Chicago 25, Ill.

17. Before installation of a grounding system and for effective maintenance of it thereafter, the soil conditions of the area should be analyzed and the soil's electrical conductance should be determined.

18. Electrical conductance of soil is determined by its moisture content, by its contact with the grounding conductor, and by its chemical ingredients. Information on specific areas can be secured from the U. S. Department of the Interior, Geological Survey, Washington, D. C.

19. Seasonal variations in water tables are listed by the Survey. The lowest average rates occur during the late summer months. This fact is important because the gradual leaching out of soluble salt in the soil causes an increase in the system's resistance.

20. The soil can be treated with chemicals such as copper sulfate, sodium nitrate, calcium chloride, or with common salt spread in the area around the ground conductor, which then can be carried into the soil by rain water, thus decreasing the circuit resistance.

21. Logical locations for ground conductors are low spots or areas containing vegetation that will hold moisture.

22. In general, soils may be classified in order of increasing resistance as follows: fills and ground containing ashes, cinders, and chemical waste products; clays, shales, loam and mixtures with slight amounts of sand, but no stones or gravel; clays, shales, loam containing sand, stones, and gravel; and gravel, sand, or stones, with little or no clay or loam.

Grounding Conductors

23. When wiring is enclosed with metal conduit or protected by armored cable, all couplings and fittings used to make connections between the conduit or cable and the electrical equipment should provide metal-to-metal contact to assure a good continuous ground return. A standard ground clamp should be used to fasten a ground

MJCO 1-inch Adhesive Compress
brings you all these features

★ LONGER . . . the longest made . . . 3½" . . . fits around and overlaps big knuckles. Won't peel up on ends when hands get wet or sweaty!

NON-RAVEL PAD . . . no loose threads in wound area . . . looks neat, stays neat!

OFF-CENTER OPENING . . . with turned-back tabs to protect sterile pad when soiled hands open it.

And it's a *large* six-layer gauze pad, a full ⅞" x 1⅛" . . . all gauze, no cotton filler! Get this complete protection . . . ask for No. 100A. Write for samples.

Medical Supply Company
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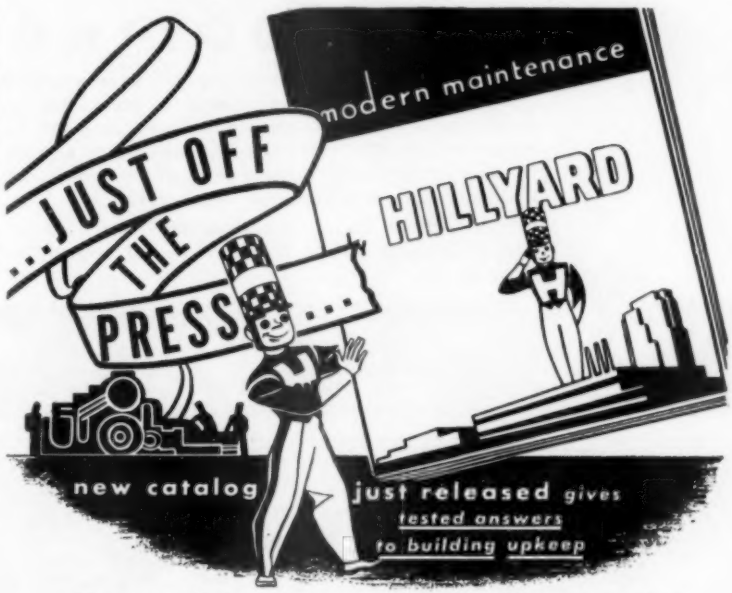

Here, compiled under one cover, is everything you want to know about floor treatments, building maintenance, sanitation, custodial training. MODERN MAINTENANCE, Hillyard's new catalog, contains a gold mine of practical guidance, latest information available, in the field of ceiling to floor maintenance. This book was designed to HELP YOU plan a low-cost maintenance program—to keep your buildings in "better than ever" condition at all times. Destined to become a "bible" of the industry . . . MODERN MAINTENANCE by HILLYARD will prove to be a profitable reference.

Contains "how-to" guidance on every phase of building maintenance, floor treatment, sanitation

- . . . how to save 50% on cleaning costs
- . . . how to reduce slipping accidents in your building
- . . . how to select proper machines, equipment, to speed particular jobs
- . . . how to keep down dust
- . . . how to remove paint and varnish without tedious sanding and scraping
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- . . . how to protect your investment in expensive floor installations
- . . . how to treat wood floors for traffic safety
- . . . how to reline a basketball court
- . . . how to seal terrazzo and cement against water, dirt, traffic wear

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Dear Sirs: Please send me a copy of Hillyard's new catalog, "Modern Maintenance", just off the press. I understand there is no charge.
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The low-cost answer to . . .

SAFE FOOTING

Eliminate all those dangerous, slippery floor areas on ramps, aisles, stairways and all over the plant. You can do it economically with quickly installed, long-wearing abrasive cloth FOOTHOLD Safety Tread cleats or rolls. The "sandpaper-rough" surface provides the sure-footing that makes the job go faster as well as safer.

Survey all those slippery areas and make them safe now with FOOTHOLD Safety Tread. Write for information.

**Trade Mark*

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Use NORTON® abrasives sharpening stones

"Ruemelin Fume Collectors certainly have a powerful suction. We welders like them because they do a good job of taking away smoke and heat."

Long Reach Hinged Type Fume Collector Extends Working Range

Welding shops equipped with Ruemelin Fume Collectors enjoy a clean working atmosphere. Smoke, heat and gas are removed quickly and efficiently. Working conditions greatly improved . . . production increased. For the large welding booth, a long reach model (shown below) makes it easy to reach any welding job. 15 ft. and 18 ft. sizes. Available in wall type or underslung ceiling type brackets.

Portable models also available. Write for Fume Collector Bulletin 37-D.

Long reach hinged type fume collector

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SAND BLAST AND DUST COLLECTING EQUIPMENT
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A5781-⅛

wire securely to a water pipe, a ground rod, or a grounded structure.

24. If the wiring is nonmetallic sheathed cable or knob and tube work, a third wire must be connected to the grounding terminal on the receptacle to provide a good conducting path to the grounding electrode or water pipe. This third wire may be included in the cable, or it may be a separate wire fastened securely to prevent accidental breakage.

25. Grounding wires should be made of copper. The size will be determined by the capacity of the nearest fuse or other automatic cutout.* For example, not less than No. 18 grounding wire should be used for portable electric tools protected by fuses whose capacity does not exceed 15 amperes. An insulated grounding wire should have a green outer covering.

26. No fuses, automatic cutouts, hand-operated switches, or other devices should be inserted in a grounding line. The path to ground must be continuous.

27. For emergency grounding of electrical tools, such as may be used by contractors before regular facilities are available, a flexible cable may be fastened directly to the noncurrent-carrying metallic parts of the tool and grounded by means of a spring clip on a suitable ground (metallic building framework, water pipe, etc.). If the grounding cable is uninsulated, it can easily be inspected for defects.

Built-in Grounding Systems

28. One method of grounding uses a three-conductor cord (four-conductor for three-phase circuit) with a multi-contact polarized plug and receptacle. This method ensures automatic use of the ground. One wire forms a continuous path from the equipment through the receptacle to the ground.

29. This method of grounding can, of course, be used only where polarized receptacles that fit the polarized plugs have been in-

* For size of grounding conductor, see the National Electrical Code, "Grounding." For Canada, refer to the Canadian Electrical Code, Part I, Section 9, "Methods of Grounding."

stalled. Otherwise, it will be necessary to use adapters or to change plugs, with resultant loss of time and possible hazard.

30. Because of a lack of standardization in the design of plugs and receptacles and also in their application, a new standard was recommended by the National Electrical Manufacturers Association.*

31. The standard specifies that a receptacle similar in size and shape to the ordinary two-pole type shall be designed to receive a plug having three blades, a U-shaped or round grounding blade with two standard parallel polarized blades (Figure 4). A receptacle of this type will permit use of the *polarized* or *non-polarized* standard plug for such tools as soldering irons, timers, testing equipment, and others that require no grounding. Such an arrangement eliminates the objection that standard plugs are useless on three-pole grounding receptacles.

32. The receiver slots are so arranged as to prevent reversal of polarity if the grounding plug is moved from one side of the duplex receptacle to the other. Each opening is different in size or shape to prevent accidental misalignment of either the polarized or standard blades. Misalignment could energize the grounding circuit so that the current would enter the frame of the tool.

33. The grounding contacts in the receptacle are made of nonferrous metal and are electrically connected to a strap or mounting yoke by means of a nonferrous strip, which will not deteriorate with age. The metal box and conduit or flexible armored cable provides one path from the receptacle to the ground. A binding-screw head is also provided for attachment of a separate ground wire, where it is already built into the circuit armored cable or nonmetallic covered cable.

34. The grounding terminal is located so that the connection is visible after the receptacle has been installed in the box. The

* American Standard for Attachment Plugs & Receptacles C-73-41, Recommended by N.E.M.A.

I KNOW I'M SAFE... with WOODEN SOLES!

- Heat resistant wooden soles
- Strong steel toe

FOR THE FACTORY...

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Wear a **Reece "Strong Toe."** Comfortable leather uppers. High, roomy steel toe protector, heat resistant wooden sole. Have comfort-safe feet at work in foundries.

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The **Reece "Hot Foot" sandals,** protect your feet in furnace and foundry rooms. Straps on over your own shoes. Heat resistant wooden soles, strong galvanized iron counter, flexible hinge toe. Cannot slip.

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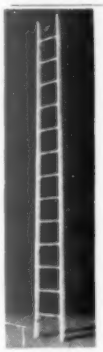

Gold Medal Single Ladder
Rung Braces. Tie Rods. Sizes 8' to 24'. Approved by Underwriters' Laboratories, Inc.

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When you buy ladders, put safety first. It's good business to insist on "Gold Medal" equipment. That's a practical way to cut your accident rate. For nearly three quarters of a century, Gold Medal Ladders have proved their superiority on every type of job.

Gold Medal Ladders are designed and skillfully built for lasting service. But safety is the first consideration. *You can depend on Gold Medal equipment!* Conform to A.S.A. Ladder Code.

Write today for New Gold Medal Ladder Catalog L-71

Gold Medal Extension Ladders
A high-quality ladder. Sizes: 16' to 52'. Approved by Underwriters' Laboratories, Inc.

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Gold Medal Platform Ladders
Provide wide working platform with tool rack at top, rung back, knee-braced steps and truss-rodded. Sizes: 4' to 18' (height of platform). Approved by Underwriters' Laboratories, Inc.

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The mat that cuts breakage costs, prevents accidents, promotes sanitation, saves money . . . . .

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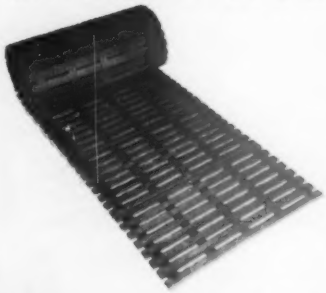

Ideal for use in shower stalls, locker rooms, lavatories and around machinery where there is a minimum of oil.

Non-slip surface. Resiliency reduces fatigue. Exceptionally tough and long wearing under heaviest traffic. Made of cotton cord bound together with rubber compounds. Ridged bottom affords aeration and drainage. Rolls up for mopping of floor. ⅜" thick. 2 feet wide; any length in one-foot sections vulcanized together.

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Canada Trust Building
Windsor, Ontario

FACTORY: West Lorne, Ontario

binding screw head on the grounding terminal is hexagonal in shape and green in color to distinguish it from the terminals used for power supply hook-ups.

35. The grounding blade on the plug is copper or copper-based alloy and is at least 0.125 inch longer than the power-conducting blades so that the ground is automatically connected first as the plug is pushed into the receptacle. This blade is either round or U-shaped and cannot enter the rectangular power slots in the receptacle.

36. On plugs employing binding screw terminals, the binding screw head is hexagonal in shape and green in color to distinguish it from the power supply terminals.

37. Grounding control can be obtained by installation of this type of grounding receptacle and by placement of this type of plug on the three wire cables on portable electrical equipment that requires grounding. When new equipment is ordered, the manufacturer should be requested to provide three wire cables with this type of plug.

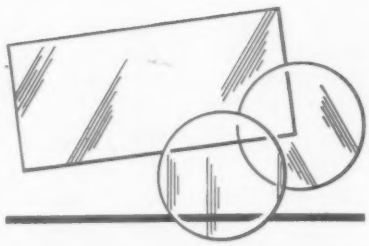
38. *Only qualified persons should install or repair receptacles and plugs.* They should make sure that the green ground wire is attached to the hexagonal green binding screw so that the frame will not be energized by improper wiring.

39. Equipment which does not require grounding can also be used with these receptacles. Adapters will not be needed, nor will the workman have to twist standard prongs to fit polarized receptacles.

40. For complete continuity of the grounding circuit, a few three-conductor extension cables with properly attached polarized plugs and receptacles should be available. Such extensions can then be used to assure proper grounding when tool cables are too short to reach the grounding receptacle.

Maintenance

41. Good maintenance will ensure a complete electrical ground path from the portable equipment through the line cord, plug, receptacle, grounding system, and ground clamp, terminating in a good earth ground conductor.



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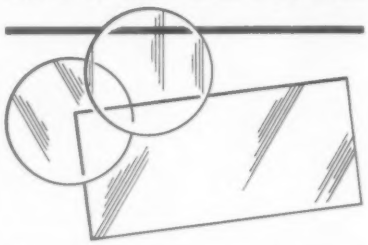

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42. The *continuity* of the grounding circuit can be checked with meters or test lamps. A simple circuit made with a dry cell flashlight bulb can be used in a distributing center or tool room to check portable tools before they are issued or upon their return. (See Figure 5.) The test should be made between the grounding prong on the plug and the tool frame.

43. The *resistance* of a ground connection should be measured at the time of installation, and checks should then be made at regular intervals. The results of these tests may indicate a need for repairs to prevent further operating troubles and to ensure safe operation.

44. The principles used in the measurement of ground resistances are essentially the same as those used for measuring other types of electrical resistances. They can be grouped into three general classes; (a) three-point method, (b) fall-of-potential method, (c) ratio method. All methods use the electrode under test, auxiliary electrodes, Wheatstone bridge, slide-wire potentiometer, and meters in circuits to secure a measurement.

45. Portable ground-testing equipment such as a Megger ground tester (not the same as the megger insulation tester), Ground Ohmer, Groundometer, or a low voltage ohmmeter provides the most convenient and satisfactory means for measuring the resistances of ground. They are self-contained and easy to operate, and the resistance is indicated directly on a dial located on the panel of the instrument.

46. When a program of ground testing is planned, use of one or more of these instruments is recommended since the whole operation can be handled by one man. A test lamp is not recommended for checking resistances of grounds because it may light when the ground resistances are higher than those specified in the codes.

47. When the framework of electrical equipment is well grounded, the resistance is low and it is extremely important that the power cable be well maintained. Otherwise, an operator

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coming in contact with a defective cable would complete the path to a low resistance shell or framework and would receive full current to ground.

Employee Training

48. Operators should be instructed in the following safe practices:

a. Protect portable equipment cables from plant traffic by stringing them overhead or enclosing them with tapered ramps.

b. Do not lay tools and other heavy equipment upon cables. If the cables break and cut through the insulation, live conductors will be exposed.

c. Keep cords free of oil and solvents. The acid in oil tends to eat through the insulation, causing it either to absorb moisture or to peel off.

d. Do not pull cords taut or around or over sharp objects.

e. *Do not use defective equipment.* Tag it and turn it in for repair. (See Figure 6.)

49. Before using equipment that has a separate grounding wire with a battery type clip, employees should be trained to attach the ground clip to the ground conductor first, and then insert the power cord. (See Figure 7.) When the job is done, they should remove the power cord first and the ground clamp last. This procedure ensures a protective ground until the power source is removed.

REFERENCES

National Safety Council Publications:

Data Sheet D-Min. 1, "Grounding Electrical Equipment in Coal Mines."

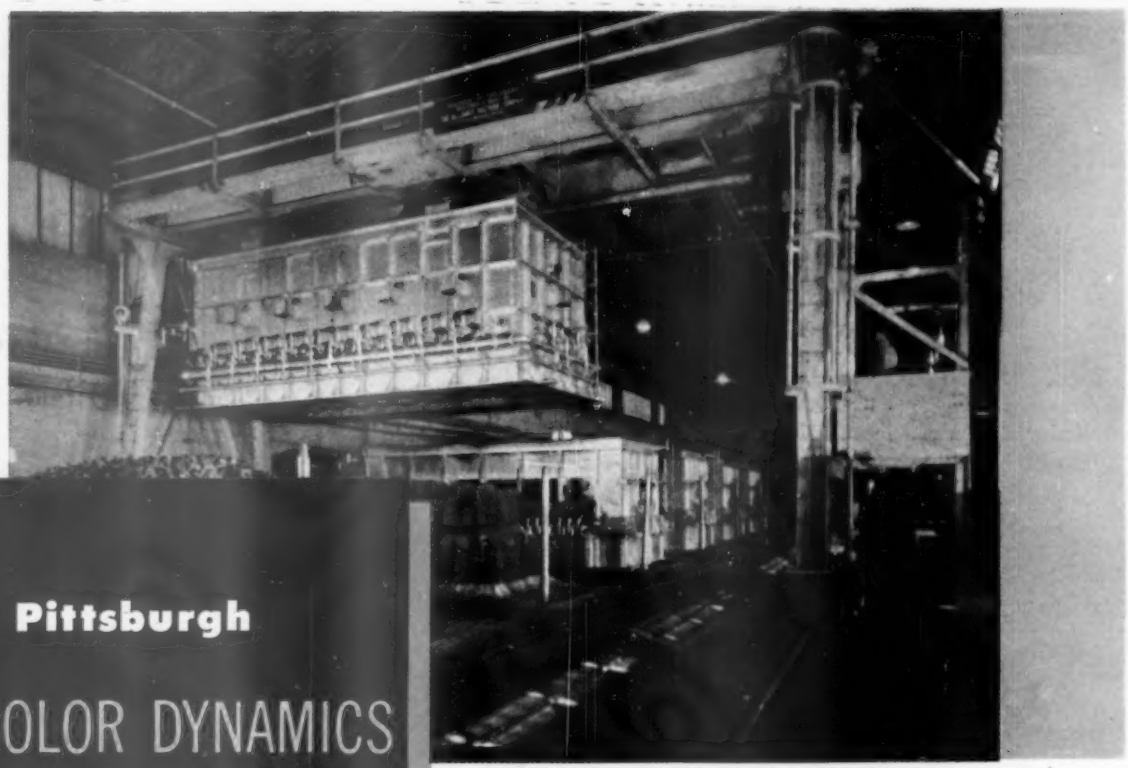
Data Sheet D-A.1, "Electrical Grounding of Airplanes."

Safe Practices Pamphlet No. 52, "Static Electricity."

Safety Reprint General No. 4, "Scientific Facts Concerning Electrical Hazards."

ACKNOWLEDGMENT

The first draft of this data sheet was prepared by R. B. Milligan, supervisor of safety, Westinghouse Electric Corporation, and member of the Executive Committee, Electrical Equipment Section, National Safety Council, and reviewed by W. R. Ainley, chairman, Engineering Committee. The final draft was prepared by George MacDonald, staff representative, Electrical Equipment Section, reviewed by the Safe Practices Conference Committee, and approved by the Industrial Conference of the Council.



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● **Characteristic of such experience** are the results achieved with COLOR DYNAMICS by the Albion Malleable Iron Company, of Albion, Michigan. During the past year this 62-year-old plant has been modernized in appearance as well as in manufacturing methods and processes until today it stands as a model for its entire industry.

● **"Recognizing** that proper painting can be the visual expression of the progressive attitude of an organization," writes T. T. Lloyd, Vice-President of this company, "we decided to color engineer our plant according to COLOR DYNAMICS. We selected colors that would improve working conditions in all departments throughout the plant and offices.

● **"These changes** have contributed to higher production efficiency, improved morale and a better safety record. Housekeeping problems, too, have been simplified, making it easier for us to secure more favorable insurance rates.

● **"Important as these** direct results of COLOR DYNAMICS are to management and workers alike, of equal importance to our company have been other long-range benefits. The improved appearance has increased good will and respect in our community. The cleaner, better-lighted and pleasanter plant attracts a higher type of worker both for executive and production jobs.

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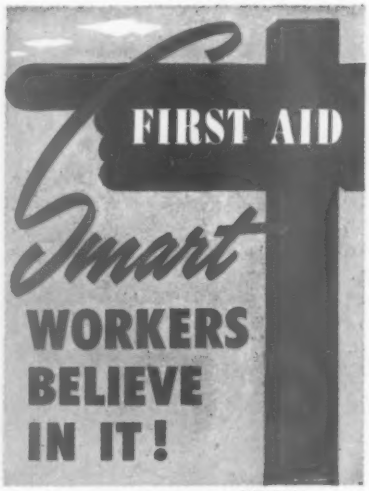
All posters displayed on these pages, except the jumbo poster, will be available through 1950, and may be secured as a part of N.S.C. membership service, or by purchase.

Posters numbered 8900 and up are new posters. Others are among the 744 posters shown in the 1950 Poster Directory.

Write to Membership Dept. of N.S.C. for further information.

NATIONAL SAFETY COUNCIL

9155-A 8½x11½



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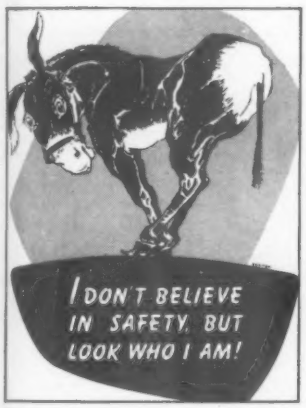
Jumbo posters 9' 11" by 11' 8" in size, designed for outdoor use, are issued monthly. They are available to members for $42.50 annual subscription.



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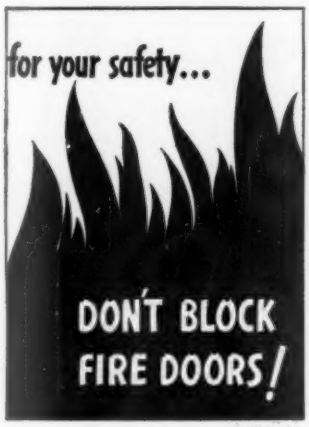

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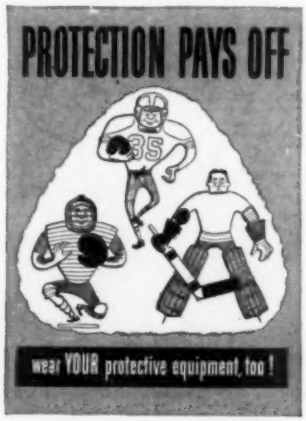

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9141-A **8½x11½**

NATIONAL SAFETY COUNCIL — PRINTED IN U.S.A.

9122-B **17x23**

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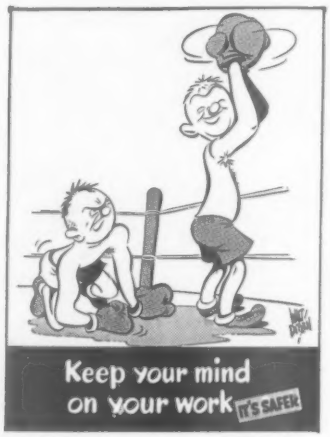

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9125-A 8½x11½

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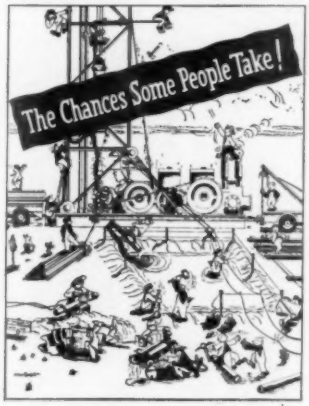

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NATIONAL SAFETY COUNCIL

8834-A **8½x11½**

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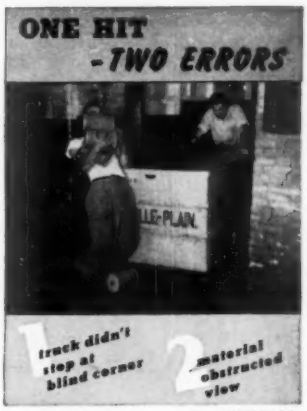

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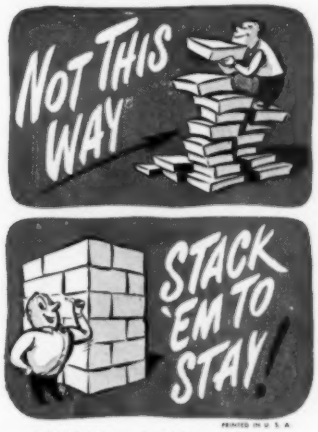

NATIONAL SAFETY COUNCIL

8785-A **8½x11½**

NATIONAL SAFETY COUNCIL

8108-A **8½x11½**

NATIONAL SAFETY COUNCIL

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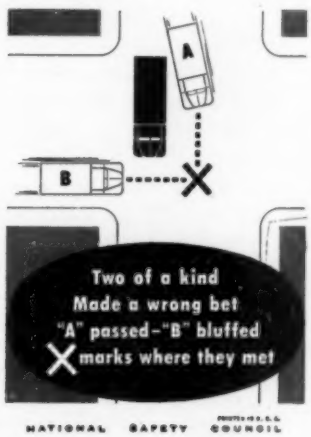

NATIONAL SAFETY COUNCIL

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Federal Safety Men Meet on River

Members of the Federal Safety Council were guests of the Philadelphia District of the U.S. Army Engineers for a recent monthly meeting on board the dredge CHESTER HARDING.

With them was Alfonso Gizzarelli, safety engineer for the Italian Ministry of Labor (front row, fourth from right). Mr. Gizzarelli's trip was sponsored by the U.S. Department of State in cooperation with the U.S. Department of Labor and is part of the ECA program.

At extreme left is M. C. Coleman, safety engineer for the North Atlantic Division of the U.S. Army Engineers. Third from right, front row, is William Hargadine, Jr., acting regional director, Wage and Hour Division, Department of Labor. Third from left is the host, James L. Cox, safety engineer for the Philadelphia District, U.S. Army Engineers.

Skin Irritants

(From page 33)

added, no antiseptics; why, then, this sudden outbreak of dermatitis?

Donning coveralls and safety glasses, down we went into the line, with its whirring, clanging confusion to find the answer in the drawling philosophy of a chap checking his grind at the unit right next to the feeder tank. "Course I don't know nothing about this here eczema, but here's one thing I do know—some likes it strong, some likes it weak. You don't see no lock on that tank do you?"

The master files in the plant superintendent's office gave the recommended dilution range for best service and prevention of breakdown due to excessive heat at the surface of the cutting tool. With up to 1200 gallons of water being added in a day's operations, chemical dissociation and skin-irritation were inevitable. A padlock controlled by the man assigned to prepare and maintain the proper concentration now prevents a recurrence of the problem.

Bertha was strong, and what she lacked in discretion, she more than made up in bustling activity. On the fifth day, after being employed to scour the many kettles and pans in a local bakery, she failed to show up, and everyone missed busy little Bertha! Then one day, she called and said her fingernails were falling off and she wasn't able to do a thing! A conference with Bertha revealed the reason for this situation of "first time it's happened here."

It seems no one had told Bertha that there was a scoop in the old, empty scouring compound barrel, and it wasn't within Bertha's range of domestic experiences to realize that you simply did not gouge out handfuls of highly alkaline cleaner with wet hands, unless you were prepared to see parts of those fingers go floating down the drain.

Mary was a hustler. When a "shop-snack service" made arrangements to serve packaged lunches and coffee in her shop, Mary got the concession. Dashing from her bench at the whistle, (tri-chlor-ethylene and all) to hand out boxes of sandwiches and pour coffee, she shortly developed contact dermatitis which required doctor's care. Relieved to find that the cause was not in his operating routine, the foreman now allows Mary ten minutes to adequately wash up before she calls out, "Come and get it!"

Julius had worked for more than twelve years on one machine —doing exactly the same thing, using the same tools, the same solvents, protected by an apron, and yet, day before yesterday he developed a dematitis, the first in all his years' of service with the company. His being seen at his machine was a simple coincidence; it occurred while walking through his department on our way to a conference in a nearby area of the plant.

The clue? Julius stood impatiently, while his foreman explained a situation, but as he did, Julius continuously rubbed the irritated fleshy sides of his forearms against a shiny, new plastic apron, the only one of its kind in the entire group of workers.

Aprons? Yes, a new batch had been received and the first had gone to Julius several days previ-

ously. A tiny corner of the plastic applied to his chest under a band-aid overnight duplicated the irritation and accounted for the dermatitis. Imagine the time and effort it might have taken, had Julius been seen away from the job, for as he exclaimed: "An apron's an apron, ain't it? This is the nuttiest thing I ever heard of."

Oil Mist

Briefly, take the instance of a crane-operator, 35 feet above the grease and grime of the shop, who developed an intolerable itching, labeled non-industrial until he was observed parking his crane cab repeatedly in an exhaust pattern of transformer oil mist. In another instance, a sniff of the air, in a confidential research area, reeking of the odor of old urine—urea-formaldehyde, for which protection was indicated.

One could go on and on, but the point is, I think, apparent; you don't flush all the birds by strolling down the highway!

The casual guest, on an escorted tour of the plant, may be led to remark: "It's a wonder more of them don't have dermatitis," or, "Anyone who doesn't itch down there must be just looking in the window." But actually, in plants where adequately trained and manned safety facilities are available; where dermatitis is a hand, or an arm, and not an upward swing in the fiscal graph, skin conditions directly attributable to irritating exposures at work can be reduced and held in check.

Immortal lines penned whimsically by a colleague on the flyleaf of my copy of McCord's little book are provocative:

Johnny's got a Dermatitis.
He works in a factory, doesn't he?
Well, all right! Industrial Dermatitis!

It is only natural for a person playing host to a very annoying irritation of the skin to assume that the cause lies with his employment. Under provisions of the Workman's Compensation Act, medical attention is furnished at the employer's expense, a consideration not to be scorned.

Assuming that the indicated occupational studies have been completed without identifying the finite cause of the dermatitis, a survey of possible extra-occupa-

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Sample sent $2.50 pp

H. S. Cover Fog-Proof, Gas-Tight Goggles for use with above respirator . . . $1.65 pp.

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tional contact must then be made. Assuring an employee that your probing inquiries are not a trespass upon his personal life, are not biased in favor of management, nor an attempt to "whitewash" shop conditions of which you, the doctor, have no first hand knowledge, calls for the patience of Job and the shrewd tactfulness of Disraeli.

After three, long war-years of filing blueprints, a young clerk developed an acute contact dermatitis. A week later she was referred for consultation as a "suspected chromate dermatitis." Several bits of blueprint paper sent along for patch testing were negative, thus bearing out fairly obvious contradictions of the role allegedly played by chromates. What really did matter, though, was the fact that the night before the dermatitis made its abrupt appearance, she had scrubbed the white fur of her snowboots with a strong mixture of laundry soap and bleach. This terrific irritation aggravated by a week of a girl-friend's salves that "sure helped me" gave her a dermatitis all right, but not because of the blueprints.

A young lady developed a little redness and itching of the fingers, caused by materials used in a duplicating procedure, and promptly relieved by use of a properly selected barrier. When another girl in the same department subsequently developed a similar dermatitis, she was given a jar of the same barrier, but the problem only became more persistent. It wasn't a case of the barrier losing its strength, but the nightly backrubs the girl gave her invalid mother which were important, because a new rubbing compound she'd been using gave a marked reaction when applied overnight under a patch.

Fingernail Polish

Few realized the dreams and ambitions of the lovely little thing at the plant switchboard, until a dermatitis of the eyelids "due to new plastic plugs" came to the doctor's attention. Scrapings of the plastic were negative on testing, but samples of the fingernail lacquers used in her night-school

His eyes are vital to Production! Keep them off the Casualty List!

HE LOST AN EYE!
YOU LOST A MAN!

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beauty culture course were very definitely irritating.

A plant sent in a plump young woman with fire in her eye. "Doc, it gets so darn hot in my part of the shop that my shirt sticks to my back!" Because you could "smell the benzene all over the place" she alleged an industrial exposure as the cause of a marked area of irritation between her shoulder blades. One of my nurses asked: "It's right under her bra-strap. Do you suppose the rubbing . . . ?" That was the clue, all right. The frayed strap of her brassiere allowed sufficient contact with the rubber threads to duplicate an experience reported elsewhere as "bra-strap dermatitis."

Just as callouses on a man's hands often suggest the type of work he does, the areas of dermatitis may offer a lead into the origin and hence the specific irritant being encountered. A punch-press operator showed me an area of dermatitis allegedly caused by contact with grease encountered in handling blanks being introduced into his machine. It seemed curious, unless he was balancing them on the tip of his index finger that the dermatitis involved only the pad of this one finger and not that of the opposing surface of the thumb.

Conversation Brings Clue

In the course of conversation, I asked if he had any other medical problem, whereupon he mentioned having consulted one of our rectal specialists. The point was obvious, once I suggested that the rectal salve, which happened to contain a potentially-irritating anesthetic, was generally applied to that unmentionable area with the tip of the index finger!

Even though one might suppose that a good thorough evaluation of contacts at work and away would just about cover the situation, such is not often the picture by the time we see the case. Almost without exception, a certain amount of self-treatment has already taken place—medications applied, not so much because of their usefulness in the problem at hand, but because of availability and the enthusiastic recommendations of fellow sufferers. On this

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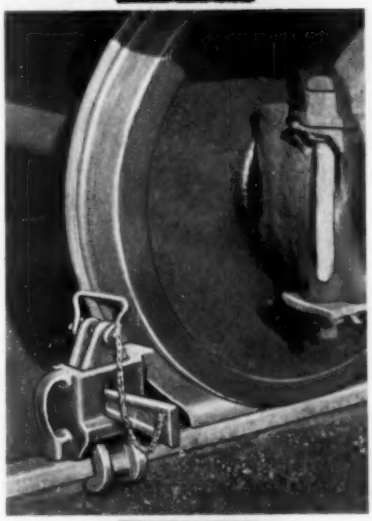

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It will not slip!

To give workers the highest degree of protection and to prevent costly derailments use the M & M Rail Clamp to hold *all* cars in position . . . on loading platforms, cars on grade, on car ferries, sidings and also traveling cranes, steam shovels and excavators.

The M & M Rail Clamp is strong in construction, simple to use. Body is electric furnace steel casting; lugs and wedges are highest grade drop forgings. Wedge is attached with strong steel chain to clamp. Sturdy handle makes carrying easier. No blocks, ties or shims necessary—saves time in moving up. Two sizes—fit any rail, worn or new.

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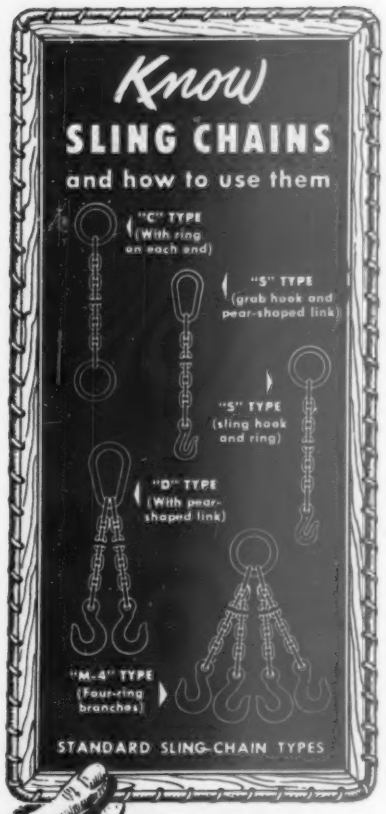

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It gives standard sling-chain specifications and shows how to specify sling and other chains used in plants and shops.

THERE'S A McKAY CHAIN FOR EVERY JOB

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point, one could really go on indefinitely, but a few typical instances may adequately make the point.

During the recent steel shortage, a young foreman, headed for big things in his department was temporarily transferred to operating a turret lathe. Several days later he developed a bizarre rash thought to be due to the centering compound. What he actually had was a case of hives due to an allergic reaction to his grand-mother's penicillin ointment which he was applying to a scratch sustained in a basketball game.

Anti-allergic Creams

With the deluge of newer "anti-allergic" and "—caine" creams now available to one and all over the counter of any drugstore, the difficulties of physicians engrossed with these problems has trebled.

Typical of the sort of thing encountered is that of the incapacitating dermatitis surrounding the eyes of Mr. Jones, an architect, supervising construction of a large factory addition in our city. For years he had been washing his eyes after each day's work with a simple boric acid prescription in order to remove cement dust encountered at work. We checked with his eye-specialist who looked up the prescription as originally written—we asked the man's druggist how he made up boric acid solution—we checked and rechecked the man's activities on and off the job. Then it struck home! What we had been assured by everyone concerned was Mr. Jones' simple boric acid solution, was surprisingly enough, a powerful eye anesthetic used by Mrs. Jones several years previously for an eye ulceration. A simple switch of inadequately labelled bottles in a crowded medicine cabinet, had led to a series of refills of the other "Jones" eye drops and the subsequent dermatitis.

A man operating a "soaker" in one of our Milwaukee breweries, developed a very severe dermatitis of the eyes following first aid to a small caustic burn of the upper eyelid. What had appeared to be a wonderful salve when he'd suffered a similar caustic burn of the ankle six months previously, was now a

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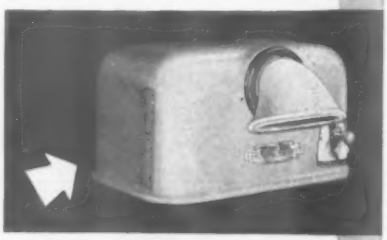
Electric HAND DRYERS
GIVE YOU
Cleaner Washrooms!



Save Towel and Maintenance Costs!

Modern washrooms today are equipped, with faster-drying Sani-Dri that dries hands or face with a stream of hot air. No buying or stocking of towels . . . no unsanitary litter or waste containers . . . no fire hazard . . . no paper-clogged soil pipes . . . no servicing of empty towel cabinets. Instead, Sani-Dri provides cleaner, more sanitary washrooms with *automatic 24 hour drying service!* YOU SAVE UP TO 85% OF WASHROOM COSTS!

ONLY SANI-DRI GIVES YOU ALL THESE NEW FEATURES!

1. Instant-starting, heavy duty switch with extra "Safety Load Factor."
2. New, faster-drying heating element.
3. New, smaller, oval nozzle produces more concentrated, faster-drying air steam.
4. Life-sealed Ball Bearing motor. Saves maintenance . . . requires no oiling.
5. Simplified timing device eliminates complicated gearing.

GUARANTEE: Sani-Driers are engineered and built by a 54-year old company that stands back of its products. They have carried the Underwriter's Seal of Approval for Over 18 Years!

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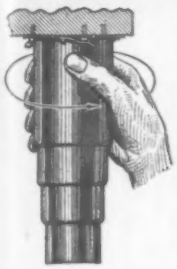

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The sure, safe and economical way to cut down slipping accidents and flash fires is to spread Oil-Spunj on greasy, oil-soaked floors.

Oil-Spunj soaks up oil and grease by contact . . . just like a sponge soaks up water . . . it's skid-proof and fire-proof.

Oil-Spunj covers more floor area per pound, soaks up more oil and grease, gives you more for your money . . . may be used over and over again. Simply sprinkle it on . . . brush with broom . . . sweep it off!

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powerful irritant. He had become allergic to a "—caine" component in the preparation! So we find that even what may have been correct for one situation, might well be just as incorrect in the next one.

These are some of the problems confronting your safety staff, whose occupational sleuthing, best handled by a teamwork approach, is dedicated to restoring those valuable hands into whose grasp you place the destiny of industrial enterprise!

The New Leader

(From page 37)

I would guess, he's had no more than two days a month to work on it."

John took our preaching in pretty good grace. He was willing to ask, "Where are the weak spots on the present committee?"

I shrugged. "Who knows. A guy who was a ball of fire last year may have to let down this year. You haven't a newsletter editor yet. And you've got just one good research enthusiast, but you're talking about three major projects. Your membership chairman is, I think, one of the real live wires, but he's young and pretty green and not too well known in the industry."

My respect for John Done mounted as I watched him lead us on to a thorough review of the personnel of the committee and to a revision of the program. We finally settled for a membership drive to be launched in the spring, after careful preparation, and with no announced percentage goal; for a research program concentrated on a single project; for a publication program to be developed, not by the three of us, but by a full meeting of the executive committee in December. And I wound up with the newsletter editorship.

When that was settled, Max said, "I am starving, but if I am going to starve, I will at least have the pleasure of making you suffer too. So I am going to make me a speech. Always you committee big shots, you want to make your committee a big thing, your section a big thing, your program some-

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Highest quality base fabrics coated inside and out with Sawyer's own industry-approved and tested Neoprene Latex give complete protection against:

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thing to brag about. That is not bad, but it is not all there is.

"You, Mr. Done, are not just a general chairman of a section. You are not working so that they will give you a pretty scroll next October and pat you on the back. You are not working to make pamphlets and posters and pretty research reports. You aren't even working to get members for the National Safety Council and people to come to see my exhibit next year.

"I am just a little peddler, but you have a job here it would scare me to hold. You are, for the next year, the leader in accident prevention for the whole industry. You know what that means? You are maybe a humble man, maybe not. But if you are not a fool—and now I think maybe you're not—you will get made humble by a job that is so big you're best won't be good enough.

"You have got to be humble inside, and you have got to throw your weight around at the same time. You have got to go to the Industrial Conference among the men who were leaders when you were a green boy checking fire extinguishers tags, and you have to be humble enough to learn from them but big enough to fight for what is right when they don't know it's right. You have got to be the voice of the industry, in safety work. You should write articles for trade journals. You should make speeches in the trade association meetings. You should write letters to all the important great men of the industry—and to all the important little fools in the industry, too.

"They should all know you, and respect you, and fear you just a little, because you are their guide and teacher and conscience. A year from now you will be just another safety man, but this year you are the leader. And many people will live instead of die, many people will not be crippled, if you are a good leader.

"And now I am dying of hunger and I know where there are little, tender shrimps in drawn butter and I will buy you dinners and sell you much safety equipment."

(To be continued)

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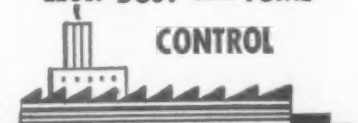

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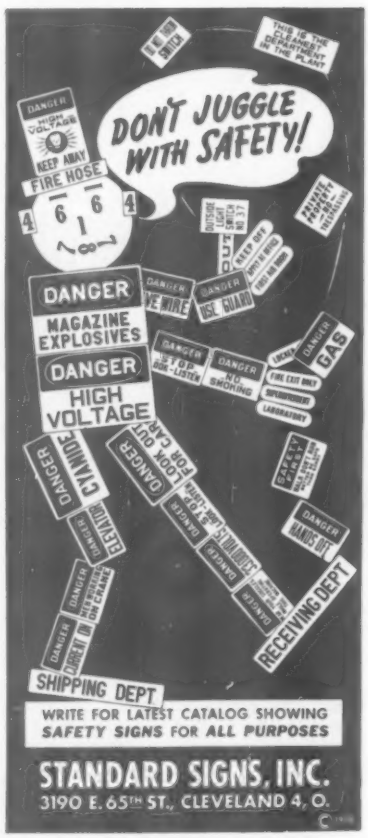

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NEW SAFETY EQUIPMENT FOR INDUSTRY

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

Rubber-Coated Glove

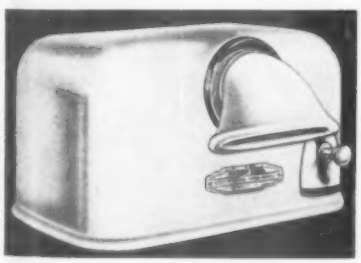
Plastiglov, a plastic impregnated glove, is being introduced by the American Rubberizing Co., 617 11th Ave., So., Minneapolis, Minn.

Waterproof and snag-proof, the form-fitting glove is heat and flame resistant. It is also claimed superior in tensile strength and tear strength and in abrasion, acid, and alkali resistance over leather or ordinary rubber gloves.

Gloves are packed one dozen pairs to the box and standard colors are red, amber, green and black.

Electric Dryer

Basic improvements in the line of Sani-Dri electric hand and hair dryers have been announced by Chicago Hardware Co., 3000 Commonwealth Ave., North Chicago, Ill. Contributing to the shorter drying time is a new, faster-drying heating element and a new, smaller, oval nozzle. This new nozzle produces a more concentrated, quicker drying air stream, and may be ordered either in swivel or fixed position.



Another feature of the improved machine is an extra-heavy-duty and instant-starting switch. The new models give peak drying efficiency, yet switches are required to use but 2/3 of their capacity, thereby allowing 1/3 of their capacity for an added "safety load factor." This new push-button switch can now be ordered on the No. 7-SRW semi-recessed wall model in place of the recessed foot switch if desired.

A new, simplified timing device eliminates complicated gearing used on the older model. The new machines are now equipped with a life-sealed ball-bearing motor. No lubrication is required. The improved features are interchangeable with the parts in old machines purchased since 1929.

Anti-Fogging

A new liquid which prevents fogging of glass and transparent plastic in humid atmospheres and at low temperatures has been announced by Master, 4444 Brooklyn Ave., Los Angeles 22, Calif. Fog-gone, the new product, has many applications including eye-glasses, safety goggles, welder's hoods and shields, refrigerated cases, show windows, automobile, truck and airplane windshields and mirrors.

The new product has a petroleum derivative base and contains silicones among other ingredients. It contains no alcohol or glycerin. Packaged in a 4 oz. polyethlene plastic "squeeze-spray" bottle, it is easy to use. It is necessary to apply only a drop to each eye glass lens or a quick spray to larger glass surfaces and then wipe with clean dry cloth or tissue. For industrial use, it is available in gallon and half-gallon sizes with separate plastic bottle dispenser.

Chest Respirator

Fairchild Camera and Instrument Corp., 80-06 Van Wyck Blvd., Jamaica, N. Y., announces a new type portable respirator called the Fairchild-Huxley Chest Respirator, designed specifically to produce artificial respiration for cases of respiratory paralysis such as sometimes occur in poliomyelitis and drug or gas poisoning.

The respirator embodies three new features. It is adjustable by means of a turnbuckle control bar so that the flexible edges of the cuirass are fitted to the contour of the body of each patient. The cuirass is supported on either side by two legs which rest on the bed and both absorb the additional weight of the atmospheric pressure on the patient and help to reduce the weight of the cuirass itself. The cuirass is ventilated by means of a specially developed sponge rubber edging which "breathes" with the exhaust air from the cuirass vacuum chamber, but seals it on the induction of air, thus minimizing perspiration and consequent irritation of the skin under the rubber edging.

A basic advantage of this type of respirator is the psychological reassurance given the patient through its quick and easy fitting, its light weight and transparency. Safety features include an oversize bellows, a continuous duty motor and an automatic alarm bell which sounds in the event of power failure. Emergency hand crank is provided for operating the unit if the power fails or is not available.

Slip-Retardant Floor Finish

Following a series of exhaustive field tests, the Johnson Wax Co. has introduced a new self-polishing, slip-retardant floor finish with all the properties of a top-quality no-buff floor wax. Known as Shur-Tred, the product is a floor finish which gives maximum beauty, protection and ease of maintenance, and at the same time provides a slip-retardant surface needed in special cases where a slip hazard exists.

Extensive field tests have been made by the company's technical service men and results are claimed to have been satisfactory in every case. Shur-Tred is easy to apply, by standard methods, dries quickly to a high gloss like other self-polishing floor waxes in the Johnson maintenance line and has the added advantage of a decided slip-retardant characteristic.

Full information can be obtained from the Maintenance Products Department, S. C. Johnson & Son, Inc., Racine, Wis.

Portable Vacuum Cleaner

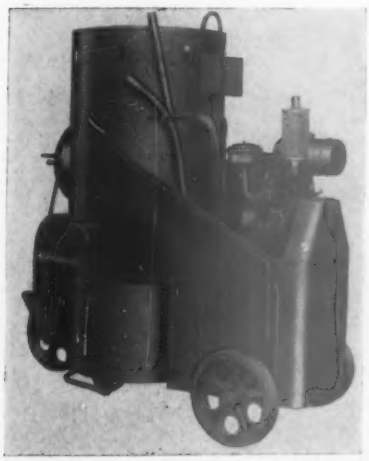
"Cleans wherever it goes," independent of electric service, is the advantage claimed for a new gasoline-engine powered vacuum cleaner announced by the Air Appliance Division of U. S. Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y. The new portable cleaner is designed to provide the efficiency and economy of industrial vacuum cleaning for those applications where the cost of electric wiring would be excessive, for cleaning outdoor areas, or for large plants requiring cleaning in widely scattered locations.

Designed as the Hoffco-Vac No. 50 for gasoline operation, the new unit is powered by a 4-cycle, single cylinder, air cooled engine rated at 6.8 H.P. It is equipped with a flame-arrestor type muffler. V-belt drive connects with a multi-stage centrifugal exhauster. In all other construction and operation features, the new gasoline-powered vacuum cleaner is exactly the same as the company's electrically operated Hoffco-Vac No. 50, just recently re-designed and improved. Two sweeper cleaning is provided with 7½ cu. ft. dust container capacity and simul-

NEW SAFETY EQUIPMENT FOR INDUSTRY

Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.

taneous operation of two 50-foot lines of 1½-inch hose. For single sweeper use, one 75 or 100-foot length of 2-inch hose can be operated with the Hoffco-Vac No.



50. Dimensions on the new unit are: length, 74 inches; width, 39 inches; height, 74 inches. Three 16-inch rubber-tired roller bearing wheels facilitate handling by one man. One swivel wheel permits the machine to be turned in its own length.

Adhesive Bandage

A new adhesive bandage with live natural rubber elasticity for more stretch and more rebound is being packed exclusively for the flexible unit system of Medical Supply Co., 1027 W. State St., Rockford, Ill. The new Handi-Tape is oil, grease

and water resistant. Off-center crinoline tabs protect the sterile, non-ravel gauze pad. Because the bandage stays in place and does not loosen or creep, it does not have to be replaced as often as most other types.

There are no loose threads to get in wound area because of the non-ravel pad which is the same size as Medical Supply's regular adhesive compress, ⅞ by 1⅛ with 6 full layers of gauze.

The bandage looks neat, stays neat, does not peel up on ends when hands get wet or sweaty. Because the bandage is smooth, it can be worn under gloves. The bandage is white in color. When hands are washed, there is no need to remove the bandage, which is oil and water resistant, and the bandage will continue to look clean and white.

Goggle-Respirator Combination

American Optical Co., Southbridge, Mass., announces that it has combined its No. 700 Rubber Frame Goggle and R2000 Respirator, fastened with either snap or rivet, to provide respirator-goggle protection in one handy unit. The combination is recommended for protection against chemical splashes, spray, light impact of foreign particles and exposures to fine dusts.

The respirator protects against a variety of dusts or gases by means of specific cartridges or disc filters and has a face mask of pliable rubber providing comfortable fit. The inhalation valve admits air freely at the lightest intake of breath and seals easily on exhalation. Valve design assures air expulsion without sticking, does not allow moisture to collect or dust to enter. The No. 700 goggle has a frame molded from non-irritating, acid-resistant, synthetic rubber giving an airtight fit against acid and dust. Broad bearing, face contacting surfaces assure maximum wearing comfort while ample perforations provide ventilation and prevent fogging. Ventilation is indirect to keep acid and dust from eyes. The shatter-resistant, easily replaceable acetate lens provides exceptional wide-angle vision.

Non-Fogging Compound

The Wilkins Co., Inc., Cortland 11, N. Y., has developed a new product to prevent fog from forming on goggles and eyewear of glass or plastic. Trade named Fog-Free, this special liquid, made possible by newly discovered physico-chemical principle, stops fogging and steaming of glasses. It is a mobile liquid which might be described as a surfactant-silicone composition designed to create an invisible coating on optical surfaces. It is non-hazardous from any standpoint either in shipment, in application or in use. To use Fog-Free, the surface to be treated is cleaned, and the product applied by spray and polished. One application will normally last for many hours.

Safety Shoe

Safety First Shoe Co., Holliston, Mass., has brought out two new additions to their line of safety shoes in the lace-to-toe models. The new 8-inch boot affords additional protection above the ankle which is often desired for rough working conditions, especially during the winter months. The

new ankle-high shoe has been designed to answer the demand for a lace-to-toe shoe with a heavy oak leather single sole. Both new styles are of black elk and are made with solid leather counters and are leather lined under the steel box toes.

Lift Trucks

Two new Lev-R-Matic controlled fork lift trucks, both of 2,000 pound capacity,

have been announced by the Mobilift Corp., Portland, Ore. Incorporated in both models are features designed to increase the accessibility of parts requiring regular servicing and maintenance. Both models have a new, 3-cylinder, heavy-duty engine and a number of visibility features to speed up materials handling and increase the safety factor. The Lev-R-Matic controls eliminate all gear shifting.

The stand-up model "E" has a newly

NEW SAFETY EQUIPMENT FOR INDUSTRY

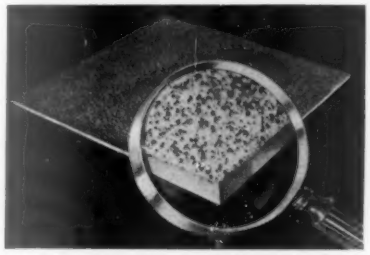
Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

designed one-piece hood that may be completely removed by the simple removal of six strategically placed bolts. Removal of the hood can be affected without any disturbance of the instrument panel, electrical or hydraulic connections. The battery, oil bath air cleaner, oil filter and other parts in this machine have been placed for easy accessibility through large, double-hinged side panels that make normal maintenance and servicing less costly and simpler to perform. Model "E" is specifically designed for maneuverability in restricted places where the operator must get on and off frequently in the course of his work. The stand-up driving gives the operator maximum visibility both forward and back which speeds up handling and is safer in case of emergencies.

The model "ER" is the sit-down type, designed for work where the driver can operate efficiently without frequent getting on and off. Exclusive with this truck is the "Mobil-Spring Suspension" knee-action rear wheels. Each rear wheel is independently sprung, using a heavy-duty spring and an airplane-type shock absorber. This knee-action feature cushions bumps, absorbs greater shock and will decrease both operator fatigue and maintenance costs. This model also features a finger-tip control parking brake. To set the brakes the operator simply depresses the foot brake and pulls back a rod that is conveniently placed near the controls. To release, the operator depresses the brake pedal. The placement of the engine, plus a large flywheel fan, draws the fresh air under the operator's seat, and over and around the cylinders. The hot air is then forced through the side panels away from the driver, making the new "ER" cooler and more comfortable for the driver. This machine also features an adjustable steering wheel that may be raised or lowered for more comfortable driving position. Four lifting eyes make it quick, safe and easy for the Mobilift to be raised or lowered to docks and platforms.

Non-Skid Floor Plate

Alan Wood Steel Co., Conshohocken, Pa., recently announced the successful production of an abrasive rolled-steel floor plate that gives maximum service in durability and efficiency. The product, Algrip, combines abrasive grain and rolled steel, hitherto considered irreconcilable materials. The abrasive grain, of the same type used in grinding wheels, is rolled as an integral part of the upper part of the steel floor plate. The result is a non-skid plate that never loses its grip since constant wear only serves to expose fresh abrasive.



Algrip can be sheared, drilled, countersunk, machined and flame-cut. For this reason it is ideal for industrial floors, loading platforms and ramps, walkways, building entrances or for trench and hatch covers. Flanging is not recommended due to the abrasive material being non-elastic. A special technique developed by the manufacturer will permit limited forming. These floor plates are manufactured in thicknesses of ⅛" to ⅜" inclusive and in widths up to 60" maximum by 144" in length. Longer lengths may be special-ordered to meet the requirements of specifications.

Skin Cleanser

The Stepan Chemical Co., 1353 N. North Branch St., Chicago, has developed a new skin cleanser known as Neutra-Foam, a mild, non-alkaline, synthetic skin detergent. Chemically it is a combination of alkanolamine salt of the sulfuric ester of technical n-dodecanol, an emollient and water.

From a mechanical or handling point of view, Neutra-Foam is a bright green colored liquid having a viscosity slightly heavier than cream. It has an excellent cloud point and can be shipped to any part of the country at any time of the year. This cleanser can be frozen solid but will come back clear without precipitation or separation by simply letting stand at normal room temperature. No agitation is required. It is readily and completely soluble in all proportions with water. Neutra-Foam is not a soap.

Gas Mask Face Piece

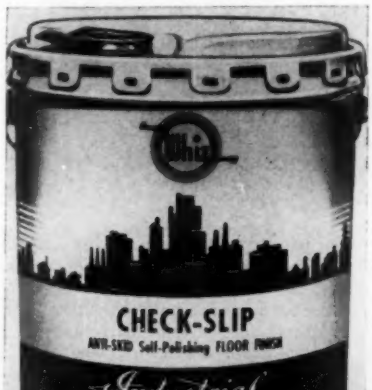
A new approved gas mask face piece which provides chin-style, chest-style and hose-mask connections in one unit and retains all the full vision advantages of their other types has just been announced by Acme Protection Equipment Co., 3037 W. Lake St., Chicago 12, Ill.

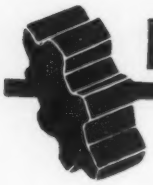
The new face piece, known as No. 6, provides the way to use the same mask for three different services, thus eliminating the need for a different face piece for each service. It will include the regular Acme features of full-vision and dead-air check valve and will introduce, among other innovations, a new type inhalation-exhalation valve for minimum breathing resistance and the 3-in-1 feature to enable use of chin canister, chest canister and hose connections on the same mask.

The Acme No. 6 face piece will replace the No. 4 and No. 5 face pieces which were limited to hose and chin canister connections respectively.

Floor Finish

A new self-polishing floor finish, tested and labeled as anti-slip by Underwriters' Laboratories, Inc., has just been announced by the R. M. Hollingshead Corp., 840 Cooper St., Camden 2, N. J. This new product, which is applied and cared for





NEW SAFETY EQUIPMENT FOR INDUSTRY

Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.

like wax although it has no wax in it, is known as "Whiz Check-Slip."

The new finish self polishes and dries to a hard lustrous finish which can be damp mopped or buffed and does not become sticky even in hot, humid weather. The finish is not only highly slip resistant, but also provides a lustrous, long-wearing floor finish.

The product was designed for use on all types of floors—asphalt or rubber tile, linoleum and wood. After the floor surface has been thoroughly cleaned, the new floor finish is applied like wax with a mop. It dries in 20 to 30 minutes and after 48 hours is water-resistant and may be wet-mopped. The new finish can be removed quickly and easily. All that is needed to remove it from any type of floor is the ordinary type of floor cleaner. Two coats of the product can be applied to a floor for increased anti-slip qualities, higher gloss and better wear. Check-Slip is a plasticized resin which dries quickly to form a continuous protective film. It is non-flammable and is resistant to heat or cold and is not subject to contamination.

Face Shields

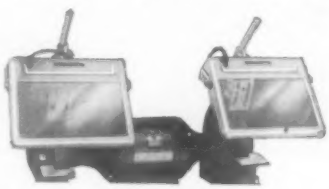
Fendall Co., 4631 N. Western Ave., Chicago 25, Ill., manufacturers of head and eye protection equipment, has recently introduced a new line of face shields available with two different types of headgear.

One type is equipped with overhead brow guard or spark-deflector. The other has open top for ventilation on hot jobs. The entire headgear is sturdily constructed with headbands formed to fit the contour of the head to insure maximum protection. The rear section is swiveled to permit up and down movement, the best fit obtained with this section worn below the base of the skull. The size adjustment mechanism is enclosed within a flat, smooth sleeve around the rear headband. Another band across the top of the head keeps unit from slipping down.

Front of headgear is equipped with leather sweatband which snaps into place and adds greatly to wearing comfort. Windows snap onto headgear and are quickly interchangeable. A wide variety of windows is available—clear, green, or wire screen, in sizes and thicknesses to meet every requirement. The shields are recommended for protection on such exposures as spot, flash and butt welding, sawing, buffing, polishing, sanding, light grinding, etc.

Grinding Wheel Guard

Stanley Electric Tools, New Britain, Conn., announces a new extra-large Safety "Flud-Lite" Eyeshield, No. 630. A 6" x 10" window fully protects operator from grinding, sanding, or polishing dust, and from other machine or tool chips. It can be mounted on any type machine, on a



horizontal or vertical surface with the square frame arm post in a horizontal or vertical plane. The larger 6" x 10" window on the new No. 630 affords 60 per cent greater visibility and protection. Safety glass for window is covered with plain glass for economical replacement. Other desirable features include adjustability in "tilt" and "height" to allow most desirable working position, and specially designed bulbs, with the filament supported to withstand vibration. Light is concentrated on the work.

News Items

R. Peacock, manager of dairy industry sales for The Diversey Corp. since 1948, has been named sales manager of General Reduction Co., a Diversey subsidiary. General Reduction Co. mines, processes and markets decolorizing and deodorizing clays for use in processing animal and vegetable oils; percolation clays for clarifying lubricating oils; water coagulant clays, diluent clays for insecticide dusts and foundry sand binder. The company was acquired by Diversey in 1949.

Dairy industry sales for Diversey will be handled from now on by H. A. Reiger, assistant general sales manager and promotional director.

* * *

Mathias A. Klein, formerly vice-president, has been elected president and treasurer of Mathias Klein and Sons, 3200 Belmont Ave., Chicago, Ill., succeeding his brother, Joseph A. Klein, Jr., who passed away June 14 this year.

* * *

The Lithox Corp., Wapakoneta, Ohio, manufacturers of corded soles and heels, corded sheet stock, shims, runner mats and mattings, announces the appointment of D. W. Moor, Jr., to the board of directors and the vice-presidency in charge of sales. Mr. Moor is also president of the American Mat Corp., and the D. W. Moor Co., Toledo, and vice-president of the Toledo Rubber Products Corp., Waterville.

* * *

B. F. McDonald Co., 5112 S. Hoover St., Los Angeles, has announced that construction has begun on a new office and manufacturing plant occupying a 4 acre site at 5721 W. 96th St., adjacent to the Los Angeles International Airport.

The new building more than doubles the space at the present plant. Of concrete and steel, with sawtooth construction over the factory portion, the new building will permit the consolidation of all operations necessary to the production of the many safety equipment items developed and manufactured by the McDonald Co.

McDonald's career in safety began spectacularly when, shortly after joining the U. S. Bureau of Mines, the Argonaut mine in the Mother Lode at Jackson, California, caught fire at midnight on August 27, 1922, trapping 47 miners below the 4,350 foot level. The fire raged for days, preventing rescue operations through the Argonaut shaft and requiring all rescue efforts to be directed through solid earth from the neighboring Kennedy shaft. After more than three weeks, miners succeeded in driving through to the Argonaut mine, and McDonald, captain of one of four rescue teams, was first to penetrate to the entombed men. McDonald's mementoes of the tragedy include photos of himself and his crew with cumbersome oxygen tanks strapped to their backs, a flame safety lamp in one hand to test the oxygen content of the air and a caged canary to test the amount of carbon monoxide pollution—a far cry indeed from the precision instruments available today for this purpose.

* * *

Robert L. Shirley, Cincinnati, Ohio, has been appointed sales manager of the Celatom Department, Insulation Division, of The Eagle Picher Co. Shirley was formerly a field representative in the Building Insulation Department of the company. A native of Louisville, Ky., he graduated from Centre College of Kentucky and was associated with the Southwestern Portland Cement Co. for 13 years prior to joining Eagle-Picher in 1948. He will make his headquarters in the Cincinnati office.

TRADE PUBLICATIONS
in the Safety Field

These trade publications will help you to keep up-to-the-minute on new products and developments in industrial health and safety equipment. They are free and will be sent by manufacturers without obligation to readers of NATIONAL SAFETY NEWS who are responsible for this work. Send in the coupon below checked for the publications you desire. Please make your requests promptly.

1. **Steel Shelving:** An illustrated pamphlet showing many different types of steel shelving and presenting various number of uses to which each may be put. Also contains line of parts bins, tool room equipment, steel benches, steel trucks, and steel drawers. Equipto, Division of Aurora Equipment Co.

2. **"Industrial Dust Control":** This bulletin is intended to disseminate general information on the subject of "dust control," with explanation of basic principles applied to the solution of industrial dust problems. Affords clear view of answers to many dust problems. W. W. Sly Mfg. Co.

3. **Power Presses:** A bulletin designed to present facts and specifications on various types and models of power presses. Also gives general descriptions of power presses, and partial list of users of these presses. Sales Service Machine Tool Co.

4. **"Fire Extinguishment":** A 4-page educational booklet on fire for distribution to fire protection personnel. An illustrated discussion of what fire is, classes of fire, and proper methods of extinguishment. For use by fire departments, brigades, insurance companies, and others. Ansul Chemical Co.

5. **Electronic Fire Detection:** A 4-page bulletin containing facts about automatic fire detection systems, and sprinkler alarm and supervisory systems. Presents different types of systems for different uses in schools, plants, hotels, and private dwellings. Specification chart included in bulletin. Lord-Taber Co., Inc.

6. **Floor Care:** A series of pamphlets and folders illustrating how to care for floors. Every type of flooring is presented along with details on what care should be given each one. Clearly presented in everyday English. Multi-Clean Products, Inc.

7. **Tips on Slipping Hazards:** A new compact, 3-color brochure designed for quick-glance information on safety wherever oils, grease and fats-plus-water create slipping hazards or costly floor maintenance problems. Contains information on how to reduce slipping hazards. Oil-Dri Corp. of America.

8. **Portable Cleaning Unit:** A brochure presenting facts on portable vacuum cleaning units. Gives information on vacuum producer, ease of handling, longer operating period and easy dust disposal. Designed for greater speed and convenience of operation. U. S. Hoffman Machinery Corp.

9. **Wire Ropes:** A new bulletin to fill need for quick reference of information pertaining to improved Plow Steel wire rope. All sizes and construction classifications combined in one table. Also contains information on how to order wire rope, and describes construction. Macwhyte Co.

10. **Conveyor Designs:** A sixty-page book showing over fifty large pictures of different types of conveyor applications with accompanying sectional drawings. New innovations in standard designs to increase adaptability to existing facilities are described. Anchor Steel & Conveyor Co.

11. **Gas Mask Protection:** An illustrated brochure on a new type of gas mask breathing apparatus. Presents information on new type of valve for minimum of resistance in breathing and increased audibility of speech. Includes detailed sectional photograph. Acme Protection Equipment Co.

12. **Industrial Equipment:** A 12-page illustrated booklet presenting many different types of industrial equipment, including spray painting and dip enameling, metal cleaning and rust proofing, hydro-filter spray booths, and drying and baking ovens. Complete, clear analysis. R. C. Mahon Co.

13. **Gauge Glass Protector:** A new brochure, illustrated, showing different types of gauge glass protectors to protect workers in the event a gauge glass bursts. Also gives information on replacing, installation, and how to order. Wright-Austin Co.

14. **Concrete Floor Hardener:** An illustrated pamphlet describing a product used to harden concrete floors and permit faster and easier flow of traffic. Shows how the use of this floor hardener can help diminish wear and eventual breakdown of concrete floors. Flexrock Co.

15. **Wire Rope Clamps:** A 40-page book of facts and figures about clamps for holding wire ropes to decrease slipping. Illustrated for many different types of jobs, and presenting test reports as made by a testing laboratory. Lists sizes available. National Safe-Line Clamp Co.

16. **Stop Slipping Accidents:** A bulletin designed to show how you can reduce slipping accidents and slippery conditions in your plant, and promote greater efficiency. Describes ease of application, economy, and length of life. Frost Paint & Oil Corp.

17. **Safety Tools:** Catalog No. 348 shows the entire line of non-magnetic, non-corrosive, and spark-resistant safety tools. Gives examples of industries in which these tools are usable for greater safety. Beryllium Corp.

18. **Plant Safety:** A helpful booklet presenting "Safety As It Applies To Supervisors" and gives answers to what today's planning will do for tomorrow. Prepared by staff of engineers, to help promote safety in your plant. Marsh & McLennan, Inc.

NATIONAL SAFETY NEWS

425 N. MICHIGAN AVE.
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NOVEMBER, 1950

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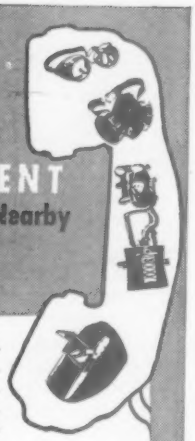

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Cesco's New #600 AIR-FED HOOD. *Approved by* U.S. BUREAU OF MINES *under "Class C" Respirator for use where toxic dust and fumes are encountered. Operating pressure 5 to 9 pounds.*

FREE ***from weighty, rigid hoods!*** CESCO's #600 AIR-FED HOOD is made of an extremely lightweight, highly flexible rubberized fabric. This, plus its complete adjustability, provides unequalled comfort and full freedom of movement.

FREE ***from hoods with narrow, fixed vision!*** CESCO's #600 has an extra-large, clear plastic window for extreme, wide angle vision. In addition, its adjustable plastic headband is mounted to the hood on a friction swivel to allow full vision up or down as the user moves his head.

FREE ***from toxic dusts!*** Air fed into the #600 HOOD is tubed around to each side of the face. Here it is diffused and filtered thru cloth bags so that a constant supply of clean, cool, fresh air is maintained directly in the respiratory zone. Further protection is given by a soft cotton bib which acts as a baffle to keep out dust. It zips out for cleaning.

FREE ***from harmful abrasive particles!*** • #600's lightweight, but tough, fabric protects the head, shoulders, chest and back against flying particles. It is also waterproof and acid-resistant. The sponge-rubber mounted, plastic window withstands abrasion, and its large area gives it excellent impact resistance.

FREE ***from fatiguing, noisy air inlets!*** • #600's carefully thought-out design and construction brings the incoming air into the hood almost noiselessly.

FREE ***to work better, faster, more safely!*** • The exclusive advantages of CESCO's new #600 AIR-FED HOOD are bound to increase worker comfort, safety, and output. It is ideal for lead discing and other grinding operations, light sandblasting, paint spraying, etc. Write for more detailed information or see your Cesco Distributor.

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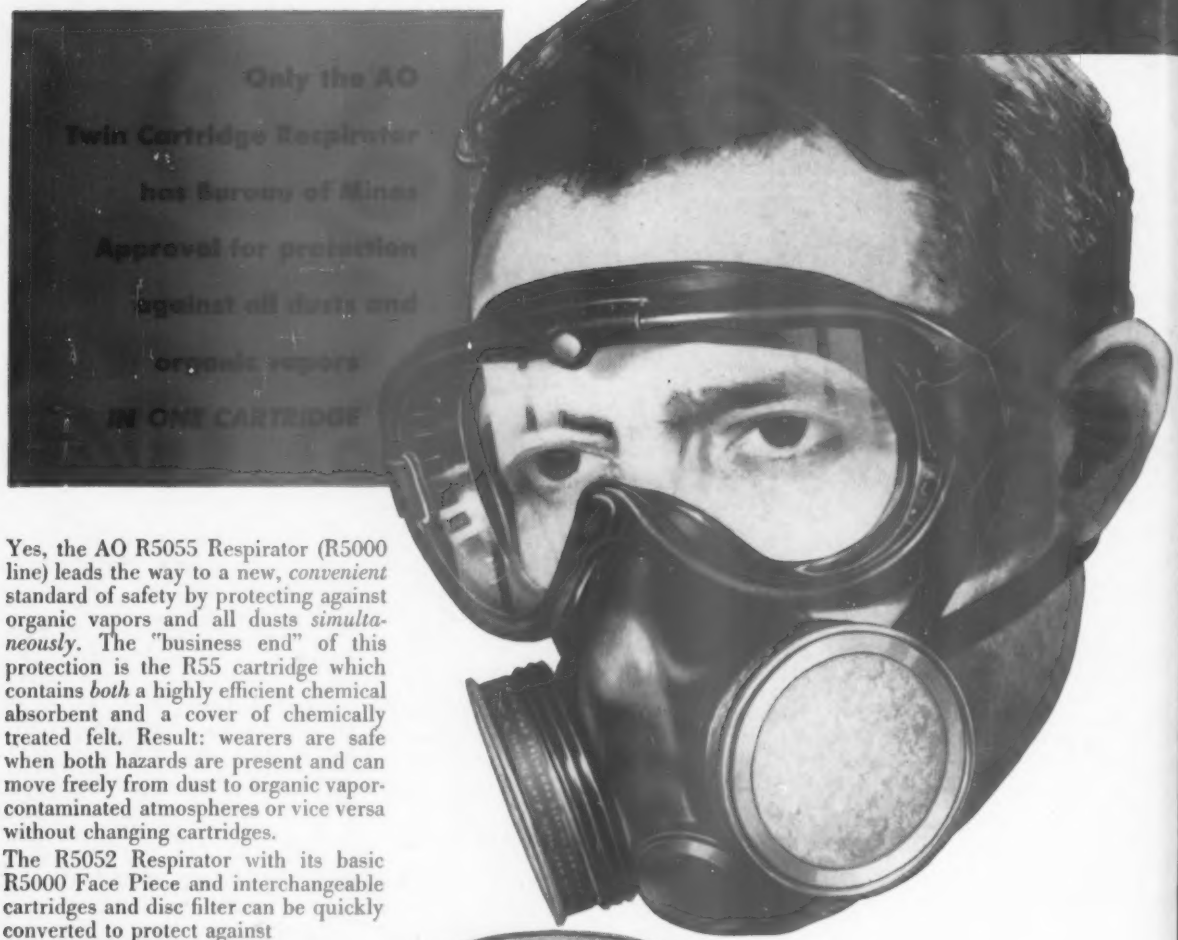
Another AO "First" in Protection!

AO R5055 Respirator



Yes, the AO R5055 Respirator (R5000 line) leads the way to a new, *convenient* standard of safety by protecting against organic vapors and all dusts *simultaneously*. The "business end" of this protection is the R55 cartridge which contains *both* a highly efficient chemical absorbent and a cover of chemically treated felt. Result: wearers are safe when both hazards are present and can move freely from dust to organic vapor-contaminated atmospheres or vice versa without changing cartridges.

The R5052 Respirator with its basic R5000 Face Piece and interchangeable cartridges and disc filter can be quickly converted to protect against

(1) A combination of all dusts
(2) Light organic fumes, vapors and gases
(3) Acid gases, fumes and mists
(4) Combined acid and organic gases
(5) Low concentrations of ammonia
(6) Metal fumes as in welding, burning, smelting, refining

Your nearest AO Safety Products Representative can supply you with this "7-in-1" respirator that gives *double* the protection.

QUICK FACTS

- New threaded chemical cartridges
- Famous AO disc type filters
- Increased visual area
- New face piece
- New flexible fitting brace
- New port and valve design
- Double headband

American Optical

SAFETY PRODUCTS DIVISION

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